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FRATERNA

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Hoya schneei *Schlechter*

Photo by Joni Kahn SRQ Hoyas

International Hoya Association

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Notes From The Editor

Important please read

Dear members of IHA and the subscribers to our FRATERNA magazine.

After the 4th quarter issue of Fraterna was mailed out in December of 2009, a glitch was discovered between the publishing program that I use to publish your magazines and the computer program which Dale Kloppenburg uses to send documents to me. Seems that my computer doesn't recognize the codes that are set in by the new Windows "Vista" program, and so just deletes them out. It also deletes out codes for bold, underlining and some other important details that are so important in order to make these species publications legal. I could have set these details in manually but unfortunately I didn't go through the articles line by line and so missed all the deleted portions. I am sending new pages with the corrections, which will appear on pages 5 through page 8. Please discard those pages from your 4th quarter 2009 Fraterna and replace with these new corrected pages.

All of the other new species that were published in the 4th quarter also need to be corrected but since I won't have the space this time, they will appear in subsequent issues.

I will announce in the "Editors Notes" when these species are to be corrected and which pages they will appear on and try my best to keep the pages all in line so there is a continuance of the 4th quarter 2009 issue. A tall order but if I don't rush or lose my mind in the process, I can do it.

We have received a great article from our new "Board of Directors" member" Linda Sinkovich about a trip made to the David Liddle Nursery in Australia. We always encourage articles from our members as they are the ones who make our organization interesting. After all, we all know what we personally are doing with our plants but really want to know what the other guy is doing. What kind of success or failure, and how come? what went wrong. What"s the right thing to do? All of these ideas and theories put down on paper and published in our magazine for all to see are what makes a really good plant organization. So, if you find something that makes your plants bloom like crazy or maybe kills off all your new growth. If you find something that is fantastic for getting rid of bugs, please tell us about it. If you've made a trip to some exciting nursery where hoyas grow in abundance, we want to know about that also. Got some great pictures? we need those too. Hey, just write me an e-mail, I can make a story out of anything!.

Ann Wayman (Editor)

Rediscovering A Hoya Species

Collecting Hoya Schneei Schlechter

Historical:

In Dr. Schlechter's Hoya Species (1993) 146-148. R. D. Kloppenburg. **Hoya schneei** *Schlechter.*

A branched half shrub, high climbing, with branches threadlike, flexible, loosely leaved, round, glabrous, leaves spreading or erect outspread, petiolate, elliptic, acuminate, with a wedge shaped base, leathery glabrous, above lucid, with cymes axillary, shaped like umbels, many flowered as a genus slenderly pedunculate; with minute triangular bracts, with the pedicels threadlike, glabrous, peduncle very short. Flowers in general midsize, according to the collector white. Calyx 5 parted all the way to the base, very small, segments ovate, somewhat obtuse, margin minutely ciliate, center glabrous. Corolla rotate, 5 lobed all the way to the middle, lobes triangular-ovate, above densely papillose-puberulous, towards the base papillose or glabrous, with the lobes of the corona spreading, somewhat horizontal, above the middle slightly concave, with an obscure raised hump below the apex, nearly ovate, towards the beak awl shaped, a little obtuse, projected over the top of the apex of the stigma head, back obtuse, sides thickened, rounded, much shorter than the apex of the anther. Anthers generally trapezoidal, appendage hyaline, oblong-ovate obtuse. Pollinia flat, obliquely oblong-ovate, outside thinly marginate, translators very short, retinaculum rhomboid, narrowing toward the base, 3 times shorter than the pollinia, with the head of the stigma pentagonally circular acute, depressed with a hump in the center of the apex, briefly obtuse.

A likely epiphyte or half epiphytic twining climber, threadlike as long a 6 meters. Leaves 8-11 cm. long, near the middle 3-4.5 cm. wide, petiole close to 7-10 mm. Peduncle at 3-4-3.5 cm. long,. Pedicels 2-2.5 cm. long. Flowers about 1.7-1.8 cm. in diameter, white or greenish white. Calyx segments about 2 mm. long. Corolla somewhat rotate, from the base to the tip the lobes are 9 mm. long. The scales of the corona from the tip to the other end about 3.5 mm long.

Karolinea: (Caroline Islands): Ponape (Dr. Schnee - blooming in the year 1909 on the road near the bathhouse near the station by Ponapae (Charles Gibbons #1044 - blooming in August 1914 in the low standing forest near Tol on Ponapae) (C. Ledermann #13262 - blooming in November 1913) also near Angaben, on Ponapae (C. Ledermann #13300a, 13384, 13384 a, 12710a - blooming and fruiting in November- December 1913.

This species is related to H. ischnopus Schlechter from Papuasia (New Guinea) but distinguished from the other through the margin of the thicker and longer hairs on the corolla and the somewhat slightly larger blooms. After being given "The Plants of Ponapae "checklist" (also spelled Ponape and Pohnpei)

One specimen of Ledermann's has a fruit from a living plant. This is as from all the other species, very narrow and spindle shaped, here 15-18 cm. long and near the middle 5-6 mm. in diameter. Published by Dr. R. Schlechter in: 1921 Botanische Jahrbücher V.56 p.567-568.

Native name, **takituk**. Leaves of this species are employed in the treatment of gonorrhea. Endemic.

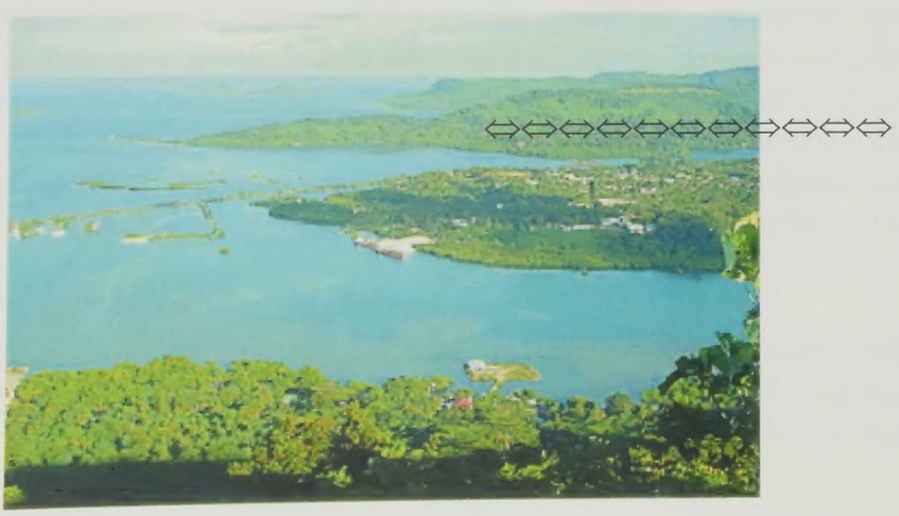
Destination:

Sight of find

In June 1986, the year I retired at age 65, I took my son Michael (16 years old) with me to Travis AFB in Farifield, California for a flight to Guam. As a retired Naval Officer I was able to fly on, space available, military aircraft. It is arduous but free, mostly it is a matter of waiting until a plane comes in with enough extra space so you can get on board. I have learned that staying near the flight Terminal area even at night gives me an advantage, so if a plane comes in I am waiting even though retired personnel have the lowest priority category. Eventually we had a flight to Hickam AFB in Hawaii, next step to wait for a flight to Guam.

On June 9 we had managed to get to Guam, Anderson AFB. During WWII, I remember being in Guam when a stream of carryalls were collecting loads of coral sand to carry to the East to make the runway for this then new airbase. From there I called the Navy flight base near the commercial airport at Agana, Guam to see if I could stay there. OK. Made contact with the operations Office and located a Lt. George Gardner Assistant Operations Officer who told me he was flying a Commander to Ponape the next day and could accommodate Mike and me.

The next morning at 1300 June 10 we were off, flying at 25,000 feet through thunder heads up to 45,000 feet to Ponape that took us 4 hours, we landed at the only airport in Krosrae. (indicated on map above).



Jut of land showing above the airstrip is about where we eventually collected Hoya schneei.

Another picture with the runway showing in upper center. I was able to find a place to stay for 3 nights (until our plane returned from Krosroae). I managed to contact the equivalent of our USDA office and found a young man, Prosper Martin who would help me find Hoya schneei. It was not easy, we asked and searched to no avail. Finally he asked his grand father and we learned the plant was sacred and called teketek (see different spelling above). So at last we were on the right trail. Mike, Prosper and I drove to a family on the peninsula north of town, dawn a very seep road to a family Alfonso Oliver, along the sea shore. There we talked and bargained, finally an old man came out, loincloth only, who was a shaman for his people, from him we got permission to have his grandson go with us to find this sacred plant.

At the Ahiau Tree: Mike, grandson of Shaman, Prosper and vine of Hoya schneei

Off once more on out the peninsula. Stop and climb up a muddy canyon, turn west to a more level place and finally here was our quest Hoya schneei at about 100 feet elevation growing on a Ahiau Tree. I had permission to take a couple of cuttings. Here in Ponape it really rains most days and heavy, till the gutters around buildings flow like rivers. (Ponape is the wettest place on earth with rainfall exceeding 300 inches a year) So when I say the hillside was muddy, is an understatement, it is slippery, soggy and everything is wet, even when it is not raining. Well I had what I came for, so maybe the plants of this species you now enjoy was from this tree.

On June 12 at 0930 we were off from Ponape headed back to Guam and finally. I looked on Anderson AFB for hoyas to no avail. On June 15, Fathers Day we went to Cocas Is off the West end of Guam still looking for hoyas but also enjoying ourselves, collected lipstick seed, ate fresh coconuts, swam in the warm pacific waters, collected sea shells then back to Anderson AFB to a room for $8, flew out at 0052 on a C-141 medavac plane for Hickam AFB in Hawaii on June 15, made it through customs, Visited Ted Green and gave him a cutting of this hoya. I had used George Gardner's car while in Guam, so called him from Hickam and told him I had left $65 under the seat of the car at Anderson AFB, hoped it was still there, the money! Had a difficult time getting out of Hawaii, I think we finally made it on the 22 nd of June.

Picture by Ann Wayman, Central Point, Oregon. "A small growing species with dark green, rather thin leaves. This plant cascades beautifully or the stems can be wrapped around the plant to keep it in bounds". And flower photo by Joni Kahn.

The word teketek I was told meant barbed fish arrow. I was never able to understand the connection of that word to our hoya ?????

Note: Type in "Nan Madol" on a computer and see the ancient stone works on this island.

Visit To Liddle's Nursery October 2009

by Linda Sinkovic

I enjoy spending time with my plants – who doesn't? But I also like to travel, and while traveling I enjoy visiting gardens and nurseries. Even though it's not easy for me to bring plants home – California has some pretty strict agricultural regulations -- I still like to visit nurseries, and see the plants that I would buy if I could just figure out how to get them back here.

So last year, when my husband and I planned a trip to Australia, visiting gardens and nurseries was already part of the plan. When he mentioned he would like to return to Queensland to see more of the Great Barrier Reef, I agreed and suggested we stay in Cairns. See, Cairns is not only the gateway to the northern part of the Reef, and a birding hotspot, but it also contains a nice botanical garden, and most important, it is a short drive to the Atherton Tableland. And the Atherton Tableland is where Liddle's Nursery is located.

As hoya lovers, we've all heard about Liddle's Nursery, right? A large collection of hoyas, one of the largest in the world. Run by David and Iris Marie Liddle, wonderful and knowledgeable people. At this point I must admit that I've wanted to see the nursery for years – I'd always imagined it as some sort of jungle area filled with huge trees and vines hanging down. As it turns out, it isn't quite like that but is amazing none the less.

So as soon as we knew the dates we'd be in Queensland I contacted the Liddles and asked if we could visit the nursery. They kindly agreed to our visit.

The timing for our visit was less than ideal. As most of you know, David Liddle passed away September 21, 2009. Graciously, Iris and son Adair allowed us to visit the nursery only a few weeks later.

The nursery is situated outside of Mareeba, about 30 minutes drive up the Kennedy Highway from Cairns. After the lush wet tropic forest near Cairns, the open woodland setting with many Eucalyptus and Acacia trees reminded me of southern California. Well, until I saw the termite mounds, which are large enough to be mistaken for some sort of geological formation. You will see them next to a driveway, just as if someone had marked the driveway with 6 foot tall (1.8m) granite boulders.

Iris and Adair greeted us as we drove in and instructed us to park the (bright red) rental car under cover, as one of the peacocks roaming the property has a propensity for attacking his reflection and cars provide a wonderful target for him. The Liddle's property is 5 hectares (about 12.5 acres) of land, with about 4 hectares left as natural forest. They have plenty of wildlife living on their property and in fact it functions as a wildlife refuge. In addition, they raise birds such as finches, lorikeets and grass parrots and have aviaries set up for the birds, as well as the shadehouses.

The shadehouses are huge and overflowing with hoyas. What a fantastic experience to wander around, following Iris as she talked about the various species and answered my questions, as well as explaining the procedures for quarantine and international shipping. There were plenty of hoyas in bloom to admire, and I see in my notes that I marked quite a few IML numbers as "nice flowers" *. It was wonderful. As well as the two hoya shadehouses I visited, there are also houses for quarantine which I did not visit -- though my husband did see them and

told me they were filled with orchids. They can also quarantine fish in one of the houses.

After seeing the plants, we visited the birds. I should admit that I have a weakness for birds, especially parrot-type birds, and I thoroughly enjoyed seeing all the lorikeets, rosellas, and others, including an incredibly beautiful golden pheasant. And of course there were plenty of wild birds flying around in the bush while we were walking around.

Then we went into the house and saw a few of the baby birds. Handraised birds are best for pets and the baby birds were absolutely charming. While I was chattering at the birds, Iris and Adair prepared a delicious prawn lunch, and my husband helped by bringing plates out to the table. We ate on the back deck with a lovely view of the waterfall. At lunch we discussed many things. Among other subjects, we discussed the future of Liddle's Nursery -- I asked Iris and Adair if they planned to continue with the nursery, and currently they are. Things may change in the future, of course. Afterwards, we left Iris and Adair and returned down the hill back to Cairns. I want to thank Iris and Adair for being so kind and hospitable, making our visit to Liddle's Nursery a wonderful memory.

Tissue Culture Update 2004

by Ted Green

Several years ago, I did an article in Fraterna on raising Hoyas from tissue culture. That was a beginning, and since then I have tried to raise newly collected material of some of the rarest things, in the lab. It is not easy – I think the gods are against me!

As I have said before, I bring back only small collections of each species, so to save them I start them in the usual manner. I have pretty good luck that way but I want a back-up in case something goes wrong so I try taking the tip of the newest growth and put it in the lab. That is the risky part for to introduce it into a sterile test-tube it must be sterile the small tip must be cleaned and I do that with 20% Chlorox. Usually, 15 minutes in 20% Chlorox, with a good rinse of sterile water cleanses the material without killing it – USUALLY, I said. It seems that the rarest (and in short supply) explant gets killed in the decontamination, or the medium is not right.

The reason for this up-date is that I found something interesting. Hoya (Absolmsia) spartiodes in nature produces leaves when it starts out as a seedling but once established, the leaves abort and the photosynthesis is carried out in the persistent flower peduncles.

Noticing the scarcity of the plants in Sabah, I thought that it would be interesting to mass produce it in the lab and then re-introduce it back into nature. That was 13 years ago, and "the best laid plans" got sidetracked until a few months ago when I put a bit of one plant into tissue culture. Everything worked perfectly – clean up, and the correct medium (Sigma MSMA Multiplication Medium), with no contamination and the plants exploded. They started growing within several weeks and within a month were proliferating BUT they acted like seedlings for all of the new growth had beautiful leaves – that did not abort. No peduncles.

The medium that I use is for proliferation but in the case of the H. spartiodies, the plantlets are producing roots so that eliminates the rooting stage so they can be planted out directly into NZ moss, in a small clay pot.

It works! So, maybe on my next trip back to Sabah, I will try re-introducing some of these lab-cultured plants into nature.

Ted Green
Green: Plant Research
Kaaawa, Hawaii

Brown Thumbs And Beautiful Hoya Plants Go Together

Those of us who love gardening, whether it's outdoors in a vegetable garden, in a greenhouse or in our homes, all have friends who describe us as having a "green thumb". Sounds glamorous but I have yet to see a single one of us with a green thumb. What I usually see is brown thumbs from digging in the dirt, cracked, split fingernails and sometimes even dirty knees. I'm speaking for myself of course, and as unglamorous as it sounds the rewards of getting "down and dirty" with our hoya plants usually yields great results.

Most of us start with the more common hoyas that we find at the garden centers but very soon the hoya bug (not to be confused with the mealie bug) bites and we find ourselves searching for another plant or two or three, and discover that "Oh my goodness here is a tiny hoya" and you had no idea that they came in a miniature size. It's a fact that hoyas come in almost every size and shape imaginable, from tiny plants with 1/8" leaves and flowers that can be a quarter of an inch in diameter (H. engleriana). To dinner size plate leaves with tiny quarter inch flowers (H. latifolia), and of course everything in between.

For the most part all hoyas can be treated pretty much the same as far as culture goes. They all like a potting mix that is porous and drains fast. Except for a very few, they like warm temperatures and fairly high humidity. They all thrive in bright light but burn badly in direct sunlight.

All hoyas like to dry somewhat between watering but never let them dry out completely which leads to yellowing leaves and usually eventual death of your plants.

We get our brown thumbs from repotting our plants and pressing the potting mix down firmly around the roots with our thumbs. Even growers who use sphagnum moss as a planting medium can have brown thumbs as the moss can stain fingers. It's our badge of honor and shows that we like playing in the dirt. Hoya cuttings are very easy to root in almost anything from the mix that is used to grow them in to a glass of plain water. I personally use a half and half mixture of perlite and vermiculite kept moderately moist, and use a heat blanket for the first 10 to 15 days which seems to speed up the rooting process. As soon as they are showing new growth, it is safe to pot them into your chosen potting mix.

One word of caution, hoya collecting is addictive. At last count, it was estimated that there are now at least 200 species under cultivation with more being discovered all the time. There are also many varieties and cultivars of some of the species, even a few hybrids have been successfully created with man's help. For some reason we hoya lovers seem to believe we must have them all until every available space is full. The excitement of growing them is nothing compared to the thrill of seeing them come into bloom, not just the first time but every time. There are those that bloom only in the spring, the summer or fall, then there are quite a few of the smaller species that bloom year round.

As we become aquinted with other growers we do find generous hobby growers who love trading and or just sharing the plant that we love with others, as well as the knowledge that they have gained along the way. Some of the plant forums online are excellent sources of information, with lots of photo's being passed along.

Happy Growing!

Ann Wayman

PHOTO GALLERY DESCRIPTIONS

Top Left

H. lamingtoniae *F.M. Bailey*: Small flowers on a rather untidy plant, but really packs a punch with its gorgeous reddish purple, very fuzzy white rimmed flowers. This is not the easiest of the hoya plants to grow and flower but if you want a challenge and are willing to wait a few years to see the first flowers this hoya is the one for you. Photo by Ann Wayman

Center Left

H. inconspicua *Hemsley:* This hoya may be H. litoralis, as I received the plant under two different names. Whatever it may be, it is a gorgeous small plant with long leathery, very shiney leaves and exquisite dark pink flowers with a cranberry red corona. It is an easy bloomer and easy to maintain. Needs lots of very bright light but as with most hoyas, no direct sun. Photo by Ann Wayman

Bottom Left

H. mindorensis *Schlechter:* A Philippine species and an absolute favorite of my many favorite hoyas. The foliage is a pleasent medium green, neat and tidy growing. This particlar clone has nice sized, perfect globe shaped umbels with up to 80 dark red individual flowers that have long, pure white, prickly fuzz on the edges of each petal. The corona is dark, crimson red and very waxey. The yellow stamens in the center of each corona are bright golden yellow and very prominent The flowers are long lasting and will remain in perfect condition for 8 to 10 days if the night time temperature is moderate and the humidity level is at least 50%. Photo by Ann Wayman

Top Right

H. Sp. rundum: I have no idea who collected this species, or if it has ever been published. I received it as IML 557 from Michael Myashiro back in 1989. It was about 5 years before it rewarded me with its first blooms.I was pleasently surprised to find that it was a very unusual hoya.It is dark rose red with tightly recurved, yellow edged petals and a tall pagoda-like corona that is dark red and very waxey. The yellow stamens peak through each corona petal, giving a bizarre display. Photo by Ann Wayman

Center Right

H. purpureo-fusca *Hooker:* A hoya species that is a favorite of almost everyone. The flower umbels of this plant are large and slightly globe shaped. The flower petals are waxey and dark dusty rose. The corona is extremely dark rose colored with prominent yellow stamens visible. The foliage is big and bold with heavy dark green veins. I get really excited when I see this plant getting ready to bloom. I get my camera ready well in advance so I don't miss an opportunity to take more good pictures. Photo by Ann Wayman

Bottom Right

H. globulifera *Blume*: I always include this gorgeous species when I'm featuring the dark rose red flowers. The flowers are as large as H. carnosa flowers, and absolutely awesome in appearance. The flower petal colors are also stunning, being light purplish pink with a wide dark purple stripe down the center and a fuzzy white halo around each petal. The corona is dark purple and waxey. Photo by Ubon Paradee

PHOTO GALLERY

PHOTO GALLERY DESCRIPTIONS

Top Left

H. blashernaezii *Kloppenburg*: A real treasure among the Philippine hoya species. Small, cup shaped, butter yellow flowers by the dozens open all at once on beautifully veined foliage that turns red in bright light. A compact plant that can live in a 6 inch pot almost forever. The one fault that it has is no fragrance. It blooms year round for me in my greenhouse. Photo by Astrid Bostrom

Center Left

H. neoebudica/H. samoensis

I'm not sure if either name is correct. I haven't been able to find any information on it under either name. What I do know is that the flowers of this plant are a very unusual color. Neither orange nor yellow but rather a distinct salmon color. The corona is waxey and has a definate pink tinge. The foliage is neat and tidy looking, medium grass green on the upper side with prominent veins and lighter on the underside. This photo was taken as the flowers were just opening but reflex nicely as they mature. Photo by Ann Wayman

Bottom Left

H. kenejiana *Schlechter*:The only part that isn't yellow on the flowers of this beautiful hoya species is the pure white fuzzy halo on the edges of each petal. The petals lay out flat and show no sign of reflexing. The corona is prominent and very waxey in texture. The leaves are not soft but have a slight cardboard texture and are acute at both ends. It appears to be a good bloomer once it gets started, and almost always has a few umbels open throughout the year. I haven't been able to detect any fragrance from these flowers. Photo by Ann Wayman

Top Right

H. pentaphlebia Merrill: Also called **H. citrina**. Of the many yellow hoyas, this species may be the biggest and also the best. The leaves on this plant are light green and can get as big as a dinner plate, and are beautifully quilted. The many flowers are a gorgeous lemon yellow with a prominent white corona. This plant takes very bright light and high humidity to bring out its best, but worth the extra effort. It also has a light fragrance of citrus. Photo by Christian Karlsson

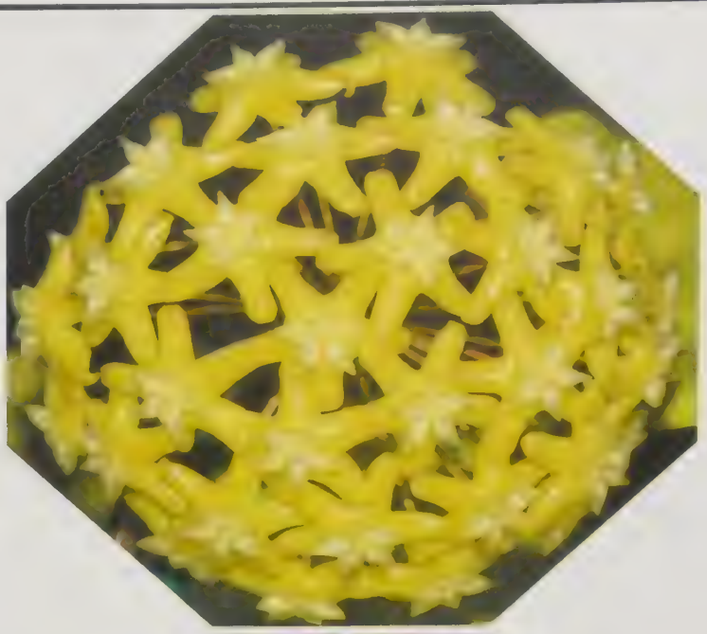
Center Right

H. hypolasia *Schlechter*: A beautiful and interesting species from New Guinea. The leaves of this species are long and narrow and the whole plant including the stems are quite pubescent. The flowers are large (about ¾" in diameter) and very beautiful, though some people think they look like something from outer space with their forward cuplike petals and the highest and largest crown of any hoya known to this date. The flower petals are a pale yellowish green and the crown is yellow. This is not a hoya for the beginner unless you can get a plant already established and growing well. Photo by Ubon Paradee

Bottom Right

H. cinnamomifolia Hooker: A spectacular species from Java, Indonesia. This species has very large, olive green, palmate, silvery veined leaves. As beautiful as the leaves are, the flowers are sensational. The flower petals open a gorgeous lime green, but gradually fade to light yellow set off by a huge cranberry red corona. This plant can get quite leggy with long internodes between leaves. It can be kept in bounds with judiscious pruning to force side branches. Photo by Ann Wayman

PHOTO GALLERY



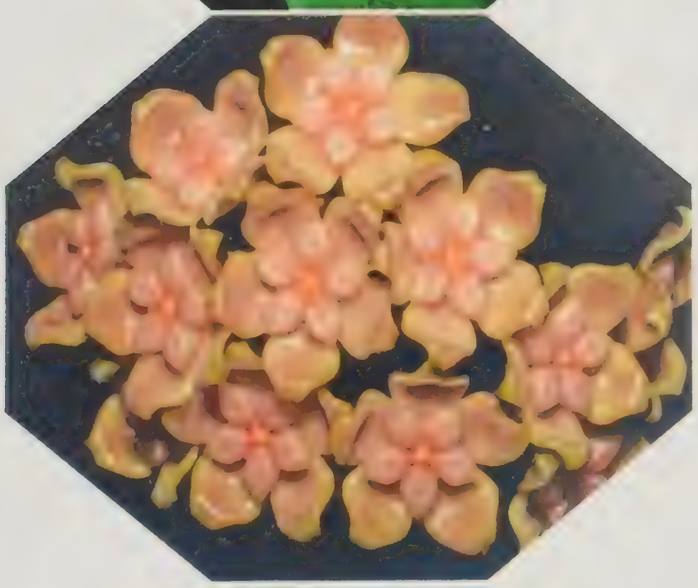


PHOTO GALLERY DESCRIPTIONS

Top Left

H. waymaniae *Kloppenburg*: This compact plant is the darling of my greenhouse. Not just because it was named for me but because it is such a dependable bloomer and beautiful to boot. Everyone who comes to my greenhouse are drawn to these gorgeous orange flowers that form perfect little balls as they reflex backwards. The corona is huge and sits atop the petals covering almost the entire crown. The corona petals are waxey yellow with a deep red center. The dark green foliage is as pretty as the flowers. Photo by Ann Strahm

Center Left

H. cumingiana *Decaisne:* This hoya species is a plant that you can either love or hate. The flowers are beautiful, and it blooms easily, however the foliage can be a real pain to keep looking nice. It needs more than the usual amount of very bright light to keep the leaves and stems from getting small and stringey. I keep it at the very top of my greenhouse where it can get the most light but even a few weeks of dreary days can cause the leaves to lose their thick, succulent, close together habit. Photo by Christina Karlsson

Bottom Left

Hoya cv. mathilde: If I understand the story that goes along with this adorable little hoya correctly, a seed pod was discovered on an H. carnosa plant in the collection of Emile Begine. The seeds were planted and several of the seedlings grew and flowered. This is just one of the plants that were selected to save. They are thought to be a cross between H. serpens the pollen parent and H. carnosa. It sure looks like a cross between the two. Photo by Eva-Karin Wiberg

Top Right

H. lasiantha *Korthals*: This particular species was the most sought after hoya for over 100 years. Even though we had an artist drawing of the plant, it was thought by many to be just the artists imagination of what the flowers actually looked like. All of the confusion was cleared up when the plant was finally rediscovered and bloomed. The flowers are weird looking but gorgeous with orange and yellow petals and a tall brownish tan corona. The petals are adorned with pure white fuzz from the apex to almost the bottom of the the petals. Photo by Ann Wayman

Center Right

H. densifolia *Turcz.*: This species has for many years been labeled a synonym of H. cumingiana. This photo was sent to me by a lady in Indonesia where the original plant of densifolia was discovered. I've had both plants bloom in my greenhouse and they really don't look very much alike, either in foliage or flowers. It will take some serious study to figure it out. Whatever it is, they are gorgeous flowers and the foliage behaves very nicely. Photo by Ubon Paradee

Bottom Right

Hoya chlorantha Rechinger: Some hoyas have green flowers, some hoyas have beautiful flowers, this species has both. The flowers are a gorgeous shade of green like peridot gemstones, and the petals are covered with a white fuzz with very fuzzy white edges. The flowers lay out flat but the petals roll under slightly on the edges and tips. The corona is yellowish green with yellow stamens. The foliage is dark emerald green and clean looking. Photo by Eva-Karin Wiberg

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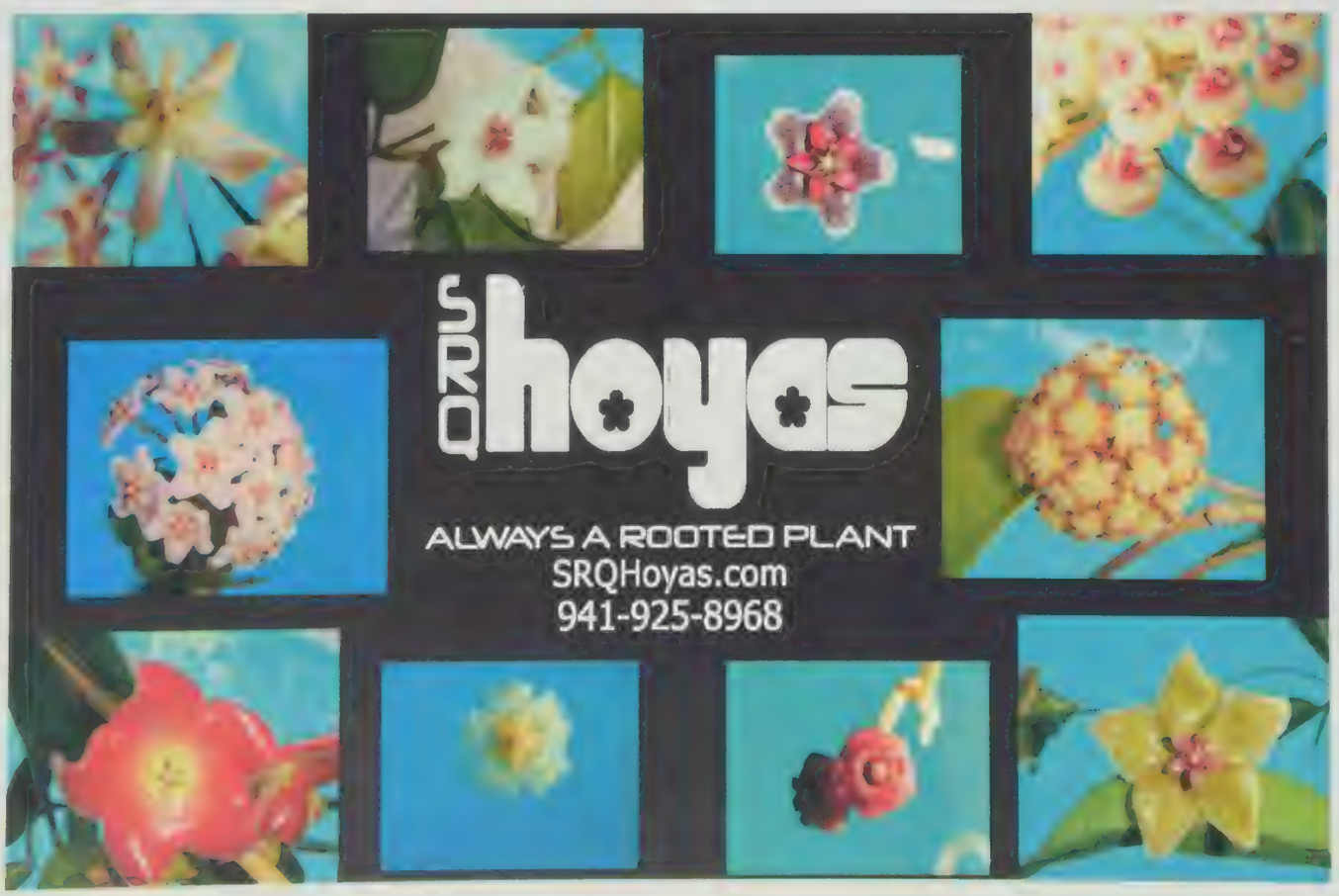

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Nothing like this has ever been attempted before! Dale Kloppenburg's wonderful text in "The World Of Hoyas" has been kept intact, while all the old black and white photocopies of herbarium sheets have been replaced by full page, full color photos of beautifully staged foliage shots with large photo insets of flower umbels that represent the particular species.

Some of the very best photographers in our organization have participated in the publishing of this book with many beautiful photographs, all labeled and correctly identified to the best of our knowledge.

If you have ever wondered what an entire plant, or even the leaves and growth pattern looks like when you see an especially beautiful umbel of hoya flowers, now is your chance. This beautiful book has been professionally bound in perfect binding with a semi-soft vinyl cover. contains 260 pages with several blank pages at the back for notes. Available now. Just $48.00 for the book plus $3.25 book rate postage in the U.S. Postage for priority mail anywhere else in the world is at present $13.50 U.S.

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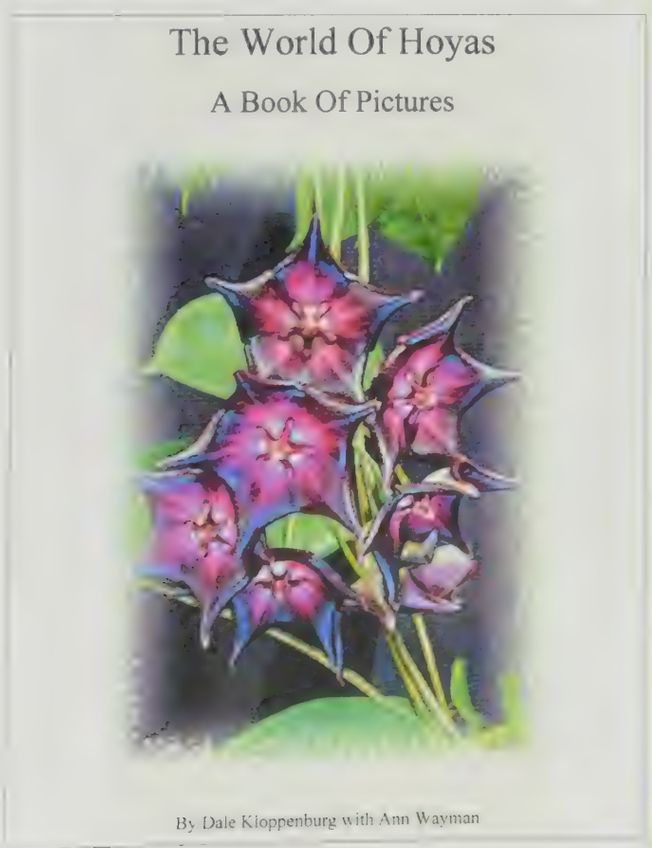

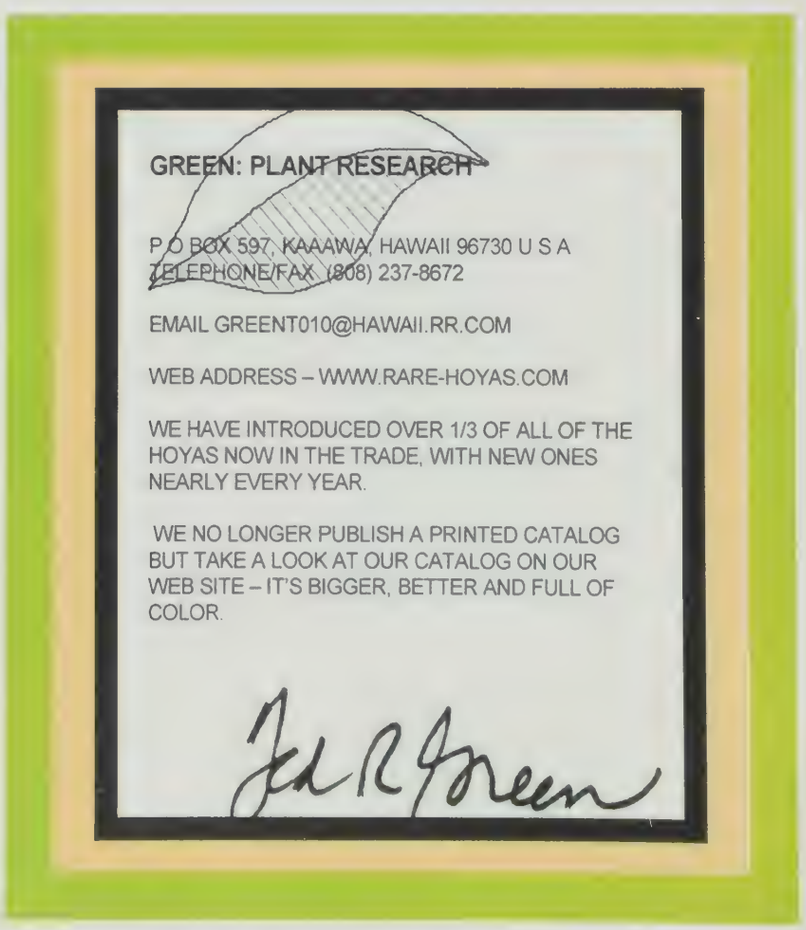
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Ted R Green

Hoya paulshirleyi T. Green & D. Kloppenburg

Hoya paulshirleyi T. Green & D. Kloppenburg sp. nova Typus 2010 (UC) hic designatus ex hort, Green Plant Research, Kaaawa . *Hoya tomatoensis* Green & Kloppenburg affinis, sed species proprio, differt foliis, lat ocvatis ad ellipticus, foliis crasse coriaceis, basi cuneatis, apicem distincte acuminatis e-basi 3 nerva, supra interioribus apicem attengentibus, supra nerviis ca. perpendicularis anastomosans distinctis. Pollinaria usuissimus differo, Pollinia 0.71 mm. longa vs 0.37 mm. Corona, corolla et pollinaria in omnes partes magnior.

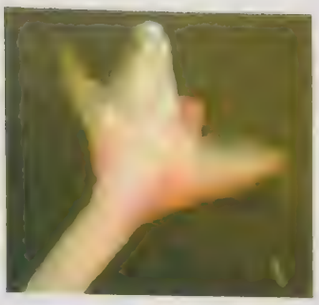
This new species has an affinity to Hoya tomataensis, but is very distinct, the foliage is different, broadly ovate to elliptic, thickly coriaceous, base cuneate, tip distinctly acuminate, with 3 basal nerves, nerves above reach the apex, and are nearly perpendicular, anastomosing and distinct. Pollinaria very different, pollinia 0.71 mm. long versus 0.37 mm. long. All parts of the corolla corona and pollinaria are larger.

This new species we name for the collector Paul Shirley, who was with the Botanical expedition to N. W. Sulawesi in 1994, his collection number is 8844. We collected this at the base of Tonsu Hill Near a small waterfall where some trees had been felled. Paul has a nursery growing and selling hoyas and other exotic plants in the Netherlands and is an avid plantsman. See www.paulshirley.nl/gardens.html.

A large leafed species, leaves 3 palmate anastomosing apex acuminate acute, base obtuse to subcordate. In the photo the secondary nerves are perpendicular to the midrib, the petiole is grooved above. Leaf 12 cm. long 7.5 cm. at the widest, glabrous.

Section of the pedicel enlarged about 8X. It is strict, terete, glabrous, orange in color, 2.5 cm. long 0.09 cm. in diameter not enlarging until right at the calyx base.

A closed flower with calyx at base enlarged about 8X. The calyx outer surface is granulose, the sepals do not reach the corolla sinuses, Outer corolla is glabrous, lobes widest above the sinuses.



Side view of the calyx enlarged about 8X. Sepals are ciliate, broad based triangular but apex is rounded, overlap at the base 1/3. 0.14-0.25 cm. long and 0.15 – 0.19 cm. at the widest.

Calyx inside view enlarged about 8X. Inner surface is slick, glabrous, thin basal ligules are present. Texture of sepals sub-membranous.

Outside surface of the corolla enlarged about 8X. Surface is finely dull granulate, center area a convex dome ca 0.35 cm. in diameter, opening 0.15 x 0.13 cm. Texture sub membranous.

Inside view of a flower enlarged about 8X. Corolla inside is pubescent. Corona is horizontal, glabrous and finely sulcate.

Sinus – sinus	0.37 cm.
Sinus – center	0.35 cm.
Sinus – apex	0.60 cm.
Apex – center	0.75 cm.
Widest	0.48 cm.

Bottom view of the corona enlarged about 8X. The lobes are channeled to the central column, rolled edges are sulcate, glabrous, outer apex is acute, broadest near the middle. Collar short and thick walled.

Top view of the corona, inner lobe is dentate, do not reach the center, dorsal is slightly concave with a noticeable umbo forward, outer apex is acute and exceeds the corolla sinus.

Apex – apex	0.36 cm.
Apex – center	0.40 cm.
Widest	0.22 cm.
Ret. - ret.	0.09 cm.
Ret. – center	0.06 cm.
Aw. – aw.	0.20 cm.
Aw. – center	0.15 cm.

The anther wings and retinacular area are sunken below the scale dorsal surface.

Side view of a scale enlarged about 32X. lobe is horizontal, note umbo near inner apex. Anther here bent down in abnormal position.

Pollinarium enlarged about 165X.

Pollinium		
	length	0.71 mm.
	widest	0.20 mm.
Retinaculum		
	length	0.18 mm.
	shoulder	0.12 mm.
	waist	0.05 mm.
	hip	0.09 mm.
	ext.	0.02 mm.
Translators		
	length	0.10 mm.
	width	0.05 mm.
	depth	0.01 mm.
Caudicle		
	bulb diam.	0.07 mm.

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H. buotii Kloppenburg

Photo by Eva-Karen Wiberg

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Back Cover

Our Cover Story by Ann Wayman

Hoya buotii Kloppenburg

A fairly new and exquisitely beautiful species. collected from Mt. Banahaw, Quezon Province, Luzon, Philippines.

These flowers are said to look similar to H. leucorhoda except for the very ciliate corolla petals that curve under at the sides, forcing the cilia to stand up on the petal tips.

I find this species to be rather hard to root from a cutting. Maintaining good growth is also rather tricky but with satisfactory conditions, meaning warmth, medium humidity, a light hand with the watering schedule plus some drastic pruning, a beautiful plant with dark green, closely set leaves and many side branches can be had.

I personally have never flowered this plant because as soon as the new branches and leaves harden off, I cut them to make new plants. Thanks to my friends who take gorgeous photos and send them to me, I always have lots of pictures to share with our members.

I believe the photo included here was taken by Monina Siar from the University of the Philippines at Los Banos (UPLB). Monina has been involved with the plant breeding program there for several years and works essentially with the Hoya genus. She along with some of her colleague's have been responsible for collecting & growing many of the new Philippine Hoya species that we now enjoy.

Correction from previous issue

The correction appearing here is not to be connected with H. buotii, but is an entirely different Hoya species. However due to lack of space and the few lines that will be used, I am printing it here.

Correction: Orthographic error and typing mistake in Fraterna 21 # 4. Should read, Hoya tamaleaanus *Kloppenburg* sp. nova, typus w2705 (HAW) hic designatus.

See Fraterna 21 # 4 Pg. 9-13 for diagnosis and description.

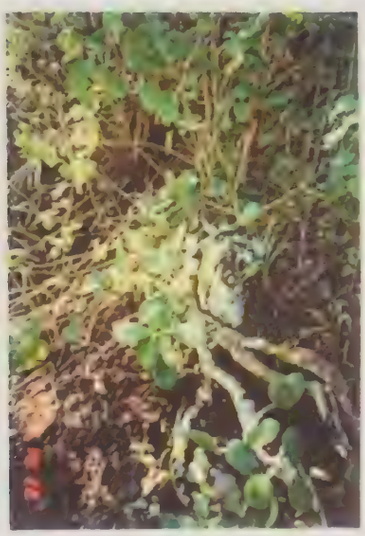
Hoya Species, Reproduction, Survival & Evolution

By Dale Kloppenburg

It would be easy to spend a lifetime studying, explaining and investigating any one of the above subjects in my title. If you have a computer and type in hoya species for instance you can find so many files it boggles the mind. Even disputes by authors as to what terms should and shouldn't be used.

Most hoya species, I have observed in collecting, are isolated, often only one plant being found in an area. For example the single plant of Hoya plicata that Ted Green and I collected in 1981 on a logged area up to the Genting Highlands in Malaysia, or Hoya paulshirleyi in 1994 on a botanical expedition in Sulawesi, where this one plant was discovered on a lunch break at the north end of Tonsu hill near a beautiful small waterfall. This does not mean that all hoya species are so sparse, as some are found over vast areas and in somewhat plentiful supply, occasionally they are very prevalent in large populations of a species. I have seen a field of Taro in Western Samoa once with hundreds if not thousands of seedlings, (so hoyas do produce seeds). In Northern Sulawsi around Tentana there was one species that was everywhere, on trees, in open fields near small shrubs etc. Often there are fairly extensive populations of Hoya diversifolia along the coasts, as on Palawan Island in the Philippines. In nature there are individuals that make up the bulk of any grouping but there are always a few that are at the very extremes, differing in some way from the all their relatives.

Hoya species, I have again observed, are mostly also confined to limited ecosystems of altitude or habitat. Hoya diversifolia for example is a low elevation plant.



Hoya diversifolia subsp. elnidicus on beach trees on West coast of Palawan Island, Philippines. Near by town of Seban, a species mostly confined to seashore conditions, sometimes with ocean waves lapping at their dangling tendrils; Hoya paziae found at ca. 3000' elevation, rare and not widespread. It is assumed that geographic isolation and genetic isolation are prerequisites for the creation of new species.

Which brings me to the subject of reproduction and my observations of parthenogenesis (reproduction without sex, asexual reproduction without fertilization). In Botany sometimes this is covered by the term apomixes. Look these up on the internet !

It has been stated that where an organism lives affects its sex life. Supposedly parthenogenesis is enhanced by island habitation (as opposed to mainland), isolation and other factors that contribute to patterns called Geographic Parthenogenesis. It has been assumed that hoyas are cross pollinated. That the structural features of hoya flower, the anther wings leading to the receptive area of the stigma, the production of honeydew, and little mentioned, the different fragrances of the hoya flowers indicate they have evolved to be cross pollinated by insects. I believe that underlying premise about hoyas being pollinated is incorrect. After seeing that old drawing in "The gardener's

Chronicle (1882)" of a fly dragging a pollinia up the anther wing slot, I kept a hand lens with me to study hoya flowers. I'll bet I have examined many thousands of hoya flowers and have never found a pollinium in a anther slot!! I also have discussed this with other collectors and they have told me the same thing, although most may not watch for this as intently as I do.

On point at left of this picture is where we collected Hoya diversifolia subsp elnidicus and where the above picture was taken. Point often lapped by sea waves at high tide. Ted Green standing on beach, ox cart taking out supplies from Mary's Place back into town for departure.

One other factor, that is not often mentioned, is the fragrance (scent) as an attractant in hoya flowers. Look at William Bass's work (at the end under references). Most flying insects seem to be on flowers in the evening (moths mostly at night) and most likely are drawn by the scent not the flower color etc. We know there are variations in the smell (scent) of hoya flowers, most sweet and pleasing but a few repugnant and foul smelling. Well different species give off different scents. We also know from studies that on the evening of the first day of flower opening the fragrance becomes the greatest, then declines the morning of the next day to rise again the second night (providing the flower still remains open) but at a lower peak and so on, on succeeding nights. Now does the different fragrances and night time attract different insects? Different scents for different visitors? Have hoya flower scent evolved to attract different visitors? It would seem logical that evening scents would be meant for night insects like moths or maybe bats, who knows? Most ants are not active at night as far as I am familiar with.

In the wild I have found very few hoyas with seed pods even in large populations (a rare occurrence). Now back to another observation and study that has led me to believe hoyas predominately reproduce by parthenogenesis. I have studied now over 68 flowers from the ends of seed pods (most provided by Ralph Davis of Corona, California from his hoya collection, (but some from pod flowers here in Fresno) and found only one that had been pollinated from a pollinium and this one a self (I have pictures of this germinating pollinium in my file of Hoya Pollinaria). Two others had a pollinarium stretched linearly from the flower central apex out over the retinaculum that had not germinated and appeared to be from the same species. None of these had the flower pollinarium disturbed. The others (65 or so) had none of the pollinarium disturbed and none had been pollinated. Now flowers attached to the ends of seed pods in hoya may not represent what is occurring throughout the hoya world, in the jungles of their origin, but it sure indicates a trend to me. Seed pods on my plants here in Fresno nearly always develop from the cool, increasing temperatures in the spring, none developing in the summer, but then a few again in the fall on decreasing temperatures.

I have intently studied insect interactions on hoya flowers, ants, skipper butterflies, very small butterflies on Guadalcanal, crawling insects like beetles and earwigs, birds, mealybugs, aphids; you name it. I have never seen an insect or anything drag a pollinarium into a flower anther slot (except Edward Gilding who hand pollinates the Eriostemma species). Never! and as I say, this is over 30 years of intently studying the flowers. Now what I have found (in Hawaii on domestic plants above Honolulu) are large ants masticating flowers even down to the pedicels and peduncles. Here there were hoyas with very large numbers of seed pods, the most I have ever seen, many times in clusters from a peduncle. I have also seen flowers eaten in the wild. I feel it is possibly a means of pollination that has been over looked. Masticating the flower and thus the pollinia and by chance getting the pollen in contact with the ovaries on flowers only partially devoured. The production of pods could also be the result of physical stimulation rather then pollination.

I am at present, firmly of the belief that more than 90% of seed pods are formed by parthenogenesis.

Now this brings up survival of the species. Since with asexual reproduction the advantages of sexual reproduction would supposedly be lost. The introduction of new genes, the ability to adapt better to situations of changing environments because of the additions of genetic variability, would favor sexuals. Supposedly asexuals can only survive in more hospitable environments. Let's consider just two factors present here. First mutation rates, mutations that would be selected for that give advantages to a parthenogenetic offspring of a hoya species. Mutation rates are high in some genera of plants e.g. Rosaceae (roses) Asteraceae (asters) and also in the genus Hoya. As vines the hoyas seem to produce a lot of mutations in the foliage but also in the flowers. I have found many mutations in my plants in the past, chimeras in Hoya obovata and Hoya nicholsoniae, foliage mutations to variegated leaves, silvering of the leaf surfaces, and differences in pubescence of the floral parts and plant. One prominent mutation involves coloring pigments especially the red anthocyanin pigments expressed many times in the vegetative parts of the hoya plant. For the visual mutations there are undoubtedly many others that are not visible. Those mutations that confer enhanced survivability will persevere in populations. I believe because most hoyas are vines and they are continuously extending their growth by branching and elongating the chances for mutations are enhanced. These mutant forms can be passed along to subsequent generations even with parthenogenesis, so variation of genotypes is not lost. Fortuitous traits can and are passed along, new flower colors, increased vigor, variations of adaptability etc. Most growers do not look for these mutations nor select for them. Having worked with many plant breeders, I am constantly aware and looking for mutations mainly those that would offer an advantage in increased vigor of the plant, resistance to diseases, more adaptable to indoor culture, more flowers more often, etc. You as a hoya grower may find a new avenue of adventure by observing the plants you have closely for any changes and selecting them for propagation. Each of these differences can be selected for, propagated and isolated to develop desirable new clones.

There is one very important natural factor in the survival, and distribution of hoyas. This is man, part of any present day ecology. Hoyas, as have orchids, attracted man with their beautiful foliage andflowers. The population of Hoya species is now ever expanding from the first plants collected and grown at the Kew Gardens in England in the beginning of the 19th century (1802). Hoyas have found new countries to expand to, new conditions to grow in, more favorable and with less competition than in their jungle past, cared for, loved, watered, fertilized, protected, propagated

and distributed, what more could a species wish for? Well maybe to be hybridized, selected and enhanced as has occurred with orchids, with now some 100,000 hybrids registered. This is survival at its best !!!

Evolution, the change with time has proceeded for millennium, and will continue on for the Genus hoya with the help of Hoya lovers, collectors, propagators, selectors, nurserymen and botanists !!

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Will the Real Angustifolia Please Stand Up?

Talk about confusion, move ***Hoya angustifolia*** to the top of the list. Let's discuss it and maybe shed some light on the one that was collected by A.D.E. Elmer in 1916 and then named by him, but not published in 1938. It was subsequently declared invalid because it was only described in English (no Latin). Actually there were 2: *angustifolias*, Traill (1828, which was declared invalid) and the Elmer (1938) which we are interested in here.

According to the International Code of Botanical Nomenclature, all descriptions after 1938 were to include an analysis in Latin. As I understand it, there were a bunch of Hoyas from the Philippines that did not get under the wire (to be published before the edict went into effect). I think that they were not published because of a lack of funds, as with many things, during the Great Depression.

For years, some of the unpublished Philippine Hoya herbarium sheets sat there until someone interested in Hoyas came along, naming those that failed to get published. To my way of thinking, the ethical thing would have been to add the Latin analysis and just republish them with the names originally proposed by the author but in some cases the names were abandoned and new names were created to "honor" some friend or relative.

To start the discussion, here is Elmer's original description of *H. angustifolia* that was sent to me by Chris Burton many years ago. The written comments and the leaf sketch on it are by Chris Burton.

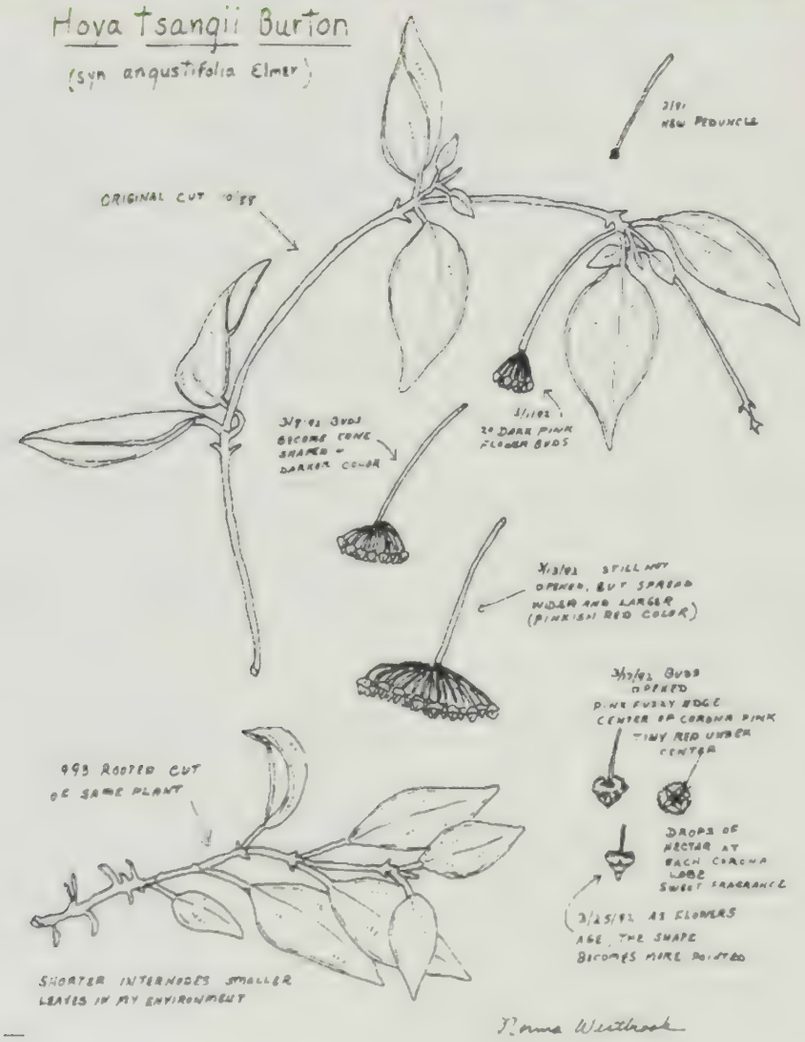
Following are the 3 herbarium sheets that really confuse the issue for they are all labeled as *H. angustifolia* – 13372, 16340 and 16916. If there had been only one sheet that would have been fine but Elmer created 3 sheets, in 2 different types – 1 thick leaved (which he declared to be un-typical) 2 with thinner and narrower leaves.

According to the Botanical code, the herbarium sheet takes precedence over the written description (why, I will never know for in many cases the written is more permanent than a leafless twig on a sheet and a bug-eaten fragment in an envelope!).

Mixed up with *H. angustifolia* is the closely related species *H. intermedia*, (Elmer's untenable name) - because A.C. Smith had already used it. Elmer said that 16340 and 16916 are very similar to *H. intermedia*; therefore, can we deduce - *kentiana* from *intermedia*, *wayetii* from *intermedia*, *tsangii* from *angustifolia* and *odetteae* (but it could not have been from *angustifolia*, for it had its own herbarium sheet.

David Silverman (DS) has checked and he can't remember where it came from or what it looked like except that it was Hoya # 70 on his list. We think that it came from Peter Tsang's brother in the Philippines. If we look at Chris Burton's note written on the *H. angustifolia* original description sheet**, "DS-70 matches exactly sheets 16340 and 16916"**, both labeled as *angustifolia*, both with thin leaves. We have not been able to confirm what DS-70 is but Chris Burton once said the DS-70 is very similar to H. *burtoniae*. That is my 81084, from the Philippines and the basis for the species.

Is this DS -70, the H. tsangii of the trade? We personally believe that this handsome thing is the one that Chris Burton meant to name after Peter Tsang


Hoya Tsangii Burton
(syn angustifolia Elmer)
2/91 NEW PEDUNCLE
ORIGINAL CUT TAKEN OFF
3/9/92 BUDS BECOME CONE SHAPED & DARKER COLOR
3/1/92 20 DARK PINK FLOWER BUDS
3/13/92 STILL NOT OPENED, BUT SPREAD WIDER AND LARGER (PINKISH) RED COLOR)
3/19/92 BUDS OPENED PINK FUZZY EDGE CENTER OF CORONA PINK TINY RED UNDER CENTER
DROPS OF NECTAR AT EACH CORONA LOBE SWEET FRAGRANCE
3/25/92 AS FLOWERS AGE, THE SHAPE BECOMES MORE POINTED
993 ROOTED CUT OF SAME PLANT
SHORTER INTERNODES SMALLER LEAVES IN MY ENVIRONMENT
Donna Westbrook

H. angustifolia, Elmer, Leafl. Philipp. Bot. X, 3572 (1938) anglice.. Ins. Philipp. (Luzon)

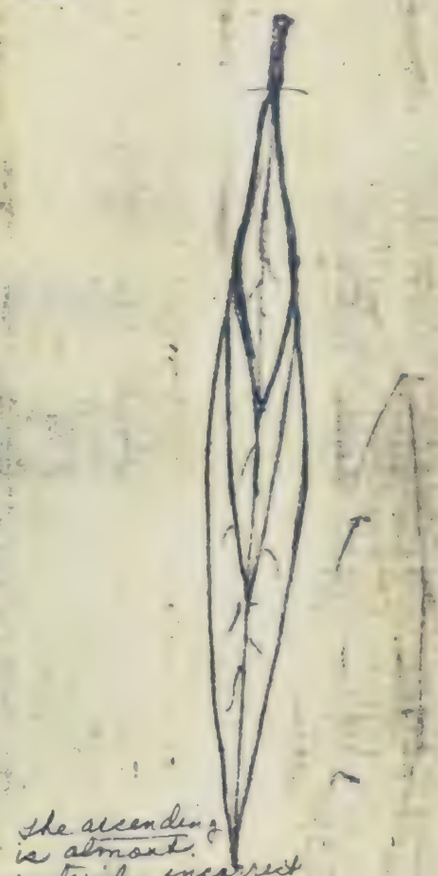
INDEX KEWENSIS

Flowers: cream

Hoya angustifolia Elm. n. sp.

He does not describe what we see on his herbarium sheet!

Sprawling along the upper side of large limbs of a huge *Dipterocarpus warburgii Brand.* Stems are long, branched and yellowish green, terete, smooth and glabrous, very tough or wiry, woody toward the base, turning yellowish brown, up to 3 mm thick, the younger branches flexible, the older ones becoming stiff and rigid, taking roots at the nodes, the interlaced branches forming masses on either side of the host limb, the nodes at the point of branching are often enlarged and bearing a coarse cluster of rigid roots. Leaves in opposite pairs, widely scattered along stems and branches but especially along the latter, very thick, descending or pendant, exceedingly rigid and difficult to cure, pale green yet slightly paler or glaucous green beneath, deciduous, narrowly lanceolate, equally tapering from the middle or the widest portion toward either end, apex sharply acute, the entire margin revolute especially toward the base, the laminae 8 to 12 cm long but often only 5 cm, 1 to 1.5 cm wide, much wrinkled on both of the dry sides, most of their faces are numerously minutely grayish white punctate or papillate; midvein scarcely visible on my specimens, lateral nerves obsolete; petioles stout, 1 cm long more or less, very gradually extending into the narrowly cuneate base of the blade proper, black to brown in the dry state, channelled along one side, transversely and longitudinally rugose and wrinkled. Peduncles axillary, arising from the enlarged nodes, strict, stout like the ultimate branches, terete, glabrous, in the dry specimens yellowish brown and wrinkled, 3 to 5 cm long, green when fresh, ascending; tubercle or flower bearing portion very thick, rounded, 1 cm long, brown with conspicuous scars, spicate not forked; pedicels ascendingly curved, similarly greenish white or pale green, filiform, 1 to 2 cm long, divaricately spreading and curved, deciduous, brown and striate; flowers quite rigid, erect, odorless, cremeus, persistent, rotately spreading into 5 acute segments, starlike in appearance, glabrous, short and subhyaline; corolla segments alternating with the calyx, united below the middle, ovately oblong in shape, 2 by 3.5 mm, the acute apices reflexed, grayish puberulent on the



the ascending is almost certainly incorrect for this species

I saw no thick stout pubescence on branches either.

At Smithsonian
Elmer # 16340
16916

Continued on next page

13372 (

upper side; corona subtended by small very thin scale, sessile upon the corolla, the 5 prominent segments radially spreading; prongs or segments ovate and thick, bearing along their sides a pair of lobes which appear notched or bilobed at the apex; anthers apparently in between and similarly spreading; stigmatic region conically tapering, erect, angular, the blunt tip covered with a fuzzy pubescence. Stalk of the follicles 1 cm long or longer, glabrous and dull brown or blackish; fruit linear, subterete, curved, smooth, the sides strongly recurved when dehiscing, greenish, 8 to 14 cm long on my specimens, more gradually pointed toward the apex than toward the base; seeds brown, flat, linear, 6 mm long, pointed at the base, truncate at the apex to which the long dingy white coma is attached.

These specimens are wider than description indicates

Type specimen numbers 16340 and 16916, discovered by *A. D. E. Elmer* in dense woody tangles at 1000 feet altitude, Irosin (Mt. Bulusan), Province of Sorsogon, Luzon, August 1916.

Number 13372 from Cabadbaran was also distributed under the above name, but it is nontypical. The foliage of our proposed new species is very similar to that of various specimens in the herbarium named *Hoya intermedia Schl.* an unpublished species. It is related to *Hoya bordenii Schl.* a broader leafed species and with which our plant was usually associated in jungles bordering lagoons.

Wonder what Elmer smoked?

Herbarium specimens of this (including holotype) show a plant belonging to Otostemma & he compares it to H. bord a plant de author (Schltr. places with H. parasitica

There is not any resemblance to H. bordenii.

LEAFLETS OF PHILIPPINE BOTANY, X, page 3572, (1938)

NOTE: All three of the above mentioned herbarium specimens are housed at the US NATIONAL HERBARIUM at Smithsonian Institution.

intermedia Schltr.
Merrill 11636
Cv Pepin 82
BS 28531

16340 & 16319 ✓ at Smithsonian

I borrowed (via Fernald Sec. Carter) #16340 & 16319 & compared with DS # 10. They match exactly!

Hoya tsangii Burton

Type description:

Hoya tsangii Burton in The Hoyan 9 #4 (1988) 2:.i-ii. Type: Elmer #13372 from Calabaran (Mt. Urdaneta) Agusan Prov., Mindanao Aug. 1912. Section: *Acanthostemma*. Syn. *H. angustifolia Elmer* in Leaflets of Philippine Botany Vol. 10 (1938) p. 3572, nom. invalid. Type: Elmer # 16340, #16916 discovered on Mt. Bulusan, Irosin, Sorsogon Prov. Luzon at 1000 feet altitude in dense woody tangles.

Caulis longi; rami filiformes, teretes flexuosi; bene foliatis; foliis ellipticus ad anguste lanceolatis; basi interdum rotundati sed plerumque, petiolum cuneatum angustata; apice acuminate acutis, 3-12 cm. longis, supra medio 1/2-2 cm. latis, supra convexis, margines omnino revolutis, utrinque setosis- pubescentibus; petioli circ. 1/2-1 cm. longi; cymis umbelliformibus, circ. 17-19 floris, pedunculo recto 3-5 cm. longo; pedicellis curvis pubescentis, inequale longis, in calycem sensim ampliatis; floribus in genere inter minimos; calycis segmentis oblongis, obtusis, extus pubescentis et ciliatis; corolla usque ad medium fere 5-lobata; extus glabra, intus pilosa, lobis decurvulus, circ. 8-9 mm. diam. quam complaratis; coronae lobis apicem versus ascendentibus obtuse .rostratis, medio gibbosis oblongo donatus, apice externo obtoso +/- 2 mm. longis x 3 1/2 mm. diam., auriculis 2 supra externo apicem longius productis; anthera appendiculatis exedente; polliniis oblongoides, translatoribus alatis, retinaculo minuto.

Epiphytic, with terete, smooth and glabrous, long branched stems, tough, wiry, woody near the base up to 0.3 cm. in diameter, young branches flexible, rooting at the nodes, intertwined branches forming tangles. Leaves widely scattered especially along the branches, very thick, descending or pendant, especially rigid, deciduous, narrowly lanceolate, equally tapering from the widest portion (middle) toward both ends, apex sharply acute, entire margin revolute, 8-12 cm. long, but many 5 cm. long and 1- 1.5 cm. wide, both surfaces papillate, midrib scarcely visible, lateral nerves obsolete. Petiole 1 cm long, extending into the narrowly cuneate base, channeled along one side. Peduncles axillary from enlarged nodes, terete, glabrous, 3-5 cm. long, green, ascending, rachis very thick, rounded 1 cm. long. Pedicels extremely curved, pale green, filiform, 1-2 cm. long, diverticulate, spreading and curved, deciduous. Umbel geotropic concave to flat. Flowers rigid 0.8 - 0.9 cm. diameter. Corolla united below the middle, lobes oblong ovate 0.2 -0.35 cm. long, reflexed, apex acute, outside glabrous, inside grayish pubescent. Corona lobes small, ascending, inner lobe extended sub acute, outer obtuse with side structures forming bilobed extensions, lobes 0.2 cm. long. Anther appendages exceeding inner lobe of corona. Stigma conical tapered, erect, angular with blunt tip covered with pubescence. Pollinia translators winged. Fruit linear, sub terete, curved, smooth, 8 - 14 cm. long, apex pointed. Seeds brown, flat, linear 0.6 cm. long pointed at base, truncate at apex with dingy white coma.*

A.D.E. Elmer's type specimens #16340 and #16916 were discovered in dense woody tangles on a huge *Diplocarpus warbargii Brand* tree at 1000' altitude, Irosin, Mt. Bulusan, Sorsogon Province, Luzon, Aug. 1916.

Elmer stated in Leaflets of Philippine Botany 10(1938)3572, the sheet #13372 (A) from Cabadbaran was not typical.

This plant is usually associated with *Hoya bordenii Schlechter* in the jungles bordering lagoons.*

*1 Note that this description closely follows Elmer's English but the flower color is not mentioned.

*2 Growing with

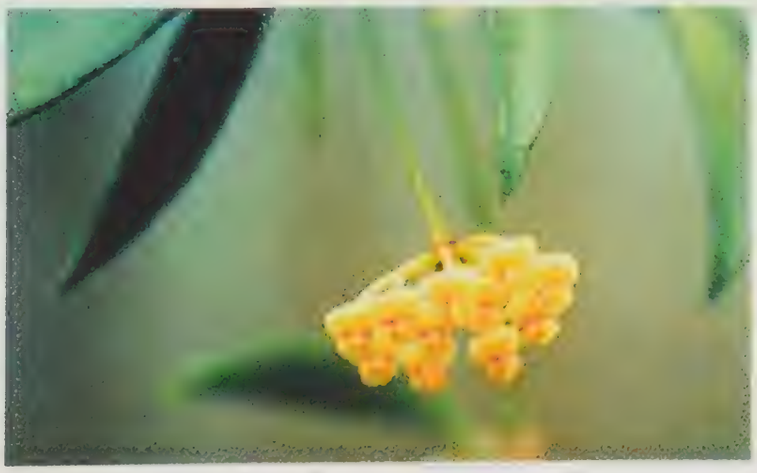
In Chris Burton's above description of *H. tsangii*, an error was committed by naming 3 type sheets when only one is allowed under the IRBN rules, so to correct this and make it valid, Dale Kloppenburg, in 1989, declared the un-typical sheet #13372 (A) from Cabadbaran to be the Type. That made it *Hoya tsangii* Burton ex Kloppenburg. We believe that, though this is in Dale's records and Passport file, this was never published for we can find no record of it.

To muddy the water and to further complicate the mess, David and Odette Cumming collected a handsome thing with small narrow, quite flat leaves and yellow flowers, on Mindanao in 1993. I grew it, flowered it, and made a herbarium sheet - the basis for this new species that Dale, in 1998, named it *H. odetteae*, honoring Odette. Incidentally, they found the plant the day after I left them on Mindanao, and went on to Sabah.

In the naming of *H. odetteae*, Dale used *H. angustifolia* (Elmer's #13372) for a comparison only and described the differences between the 2, noting what sets it apart. The *H.odetteae* Type # 5604 is at Bishop Museum and the Isotypes at University of California and the Philippine National Herbarium.

Several obvious differences between odetteae and angustifolia are: Leaves are thinner (of less substance), half the size, margins are not revolute, flatter and the veins more visible. And the whole plant is weaker.

Now, somehow the names have been twisted and confused to the point that some call this plant *Hoya tsangii*.



Hoya kentiana Burton - Holotype (from H intermedia, Schl.) 28531 (BO)

Hoya kentiana syn *Hoya wayetii* ?

H. Angustifolia, H. Intermedia, H. Odetteae and DS-70 - innocently, before all the name changes. So which is which, *angustifolia, intermedia, tsangii, kentiana, wayetii* and *odetteae*?

Will the real Hoya angustifolia please stand up?

Dorothy and Ted Green

Green: Plant Research

Kaaawa, Hawaii

July 2010

PHOTO GALLERY DESCRIPTIONS

Top Left

H. benitotanii *Kloppenburg*...Originally labeled and sold in the United States as H. gigantangenensis *Kloppenburg*, and overseas as H. bicknellii *Kloppenburg*. The name has been changed completely, hopefully in an attempt to divert any confusion that was caused by this mislabeling. By any name this is a gorgeous plant, very large with big waxy leaves and numerous umbels of long lasting golden yellow flowers: Photo by Ann Wayman

Center Left

H. cinnamomifolia *Hooker*...A beautiful species from Java sporting huge, sensational olive green leaves with silvery spots and splashes.The flowers are of course the most spectacular feature of this species with large waxy corolla petals of lime green and a huge waxy crown of glistening, cranberry red corona lobes. This species can get very rampant and stringy unless it is pruned drastically and often. If cut back to the last set of large leaves, the new leaves will usually come in close together making a more compact plant: Photo by Ann Wayman

Bottom Left

H. madulidii *Kloppenburg*...This species has consistently been sold as *Hoya ciliata*, a rare and difficult to find hoya species. No one who has studied the description of *Hoya ciliata* would mistake *Hoya madulidii* for that species. A beautiful Hoya species in the Eriostemma section with very large, waxy, almost black flower petals and a huge yellow corona with red center. The foliage is covered with a dense velvety fuzz. This species can grow to 60 foot or more in length: Photo by Ted Green

Top Right

H. enduaensis *Kiew*...An adorable novelty plant with 1 inch wavy edged, emerald green leaves. This small plant blooms faithfully 2 to 3 times a year with pumpkin orange flowers and tall cranberry red coronas with yellow centers. This hoya is a creeper and grows best in a shallow container filled with medium orchid bark, kept barely damp. I usually also lay a small chunk of fir or cottonwood in the dish because they also like to climb and cling onto rough surfaces: Photo by Kim Yap

Center Right

H. bicolor *Kloppenburg*...Beautiful foliage, gorgeous flowers! The flowers of this species are very similar in appearance to the flowers of the H. finlaysonii complex. However the foliage is without the heavy veins that we see on those species. The flower colors are spectacular with buff colored to dark tan corolla petals with wide burnt orange to red edges. Once the petals reflex backwards, the edges are no longer visible, however when they start to close they open out again for a day or so: Photo by Monina Siar

Bottom Right

H. lobbii *Hooker*...An unusual hoya species very similar in growth habit to H. polyneura *Hooker* but without the fishtail appearance of the leaves. The flowers are spectacular and there are two flower colors to choose from, red and orange. The corolla petals are very firm and waxy, dark red on the red version and light reddish orange on the orange version. The red version shown here in the Photo Gallery has very dark almost blackish red corona scales that are so hard and waxy that they lend themselves to a very long period in bloom, sometimes a month or more...Photographer unknown.

PHOTO GALLERY

ONE OF A KIND

Nothing like this has ever been attempted before! Dale Kloppenburg's wonderful text in "The World Of Hoyas" has been kept intact, while all the old black and white photocopies of herbarium sheets have been replaced by full page, full color photos of beautifully staged foliage shots with large photo insets of flower umbels that represent the particular species.

Some of the very best photographers in our organization have participated in the publishing of this book with many beautiful photographs, all labeled and correctly identified to the best of our knowledge.

If you have ever wondered what an entire plant, or even the leaves and growth pattern looks like when you see an especially beautiful umbel of hoya flowers, now is your chance. This beautiful book has been professionally bound in perfect binding with a semi-soft vinyl cover. contains 260 pages with several blank pages at the back for notes. Available now. Just $48.00 for the book plus $3.25 book rate postage in the U.S. Postage for priority mail anywhere else in the world is at present $13.50 U.S.

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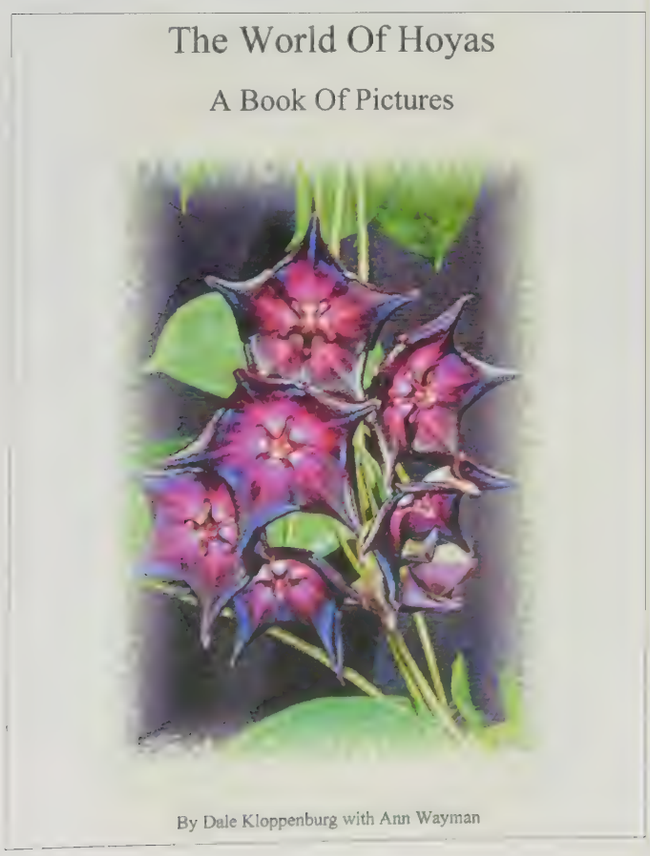

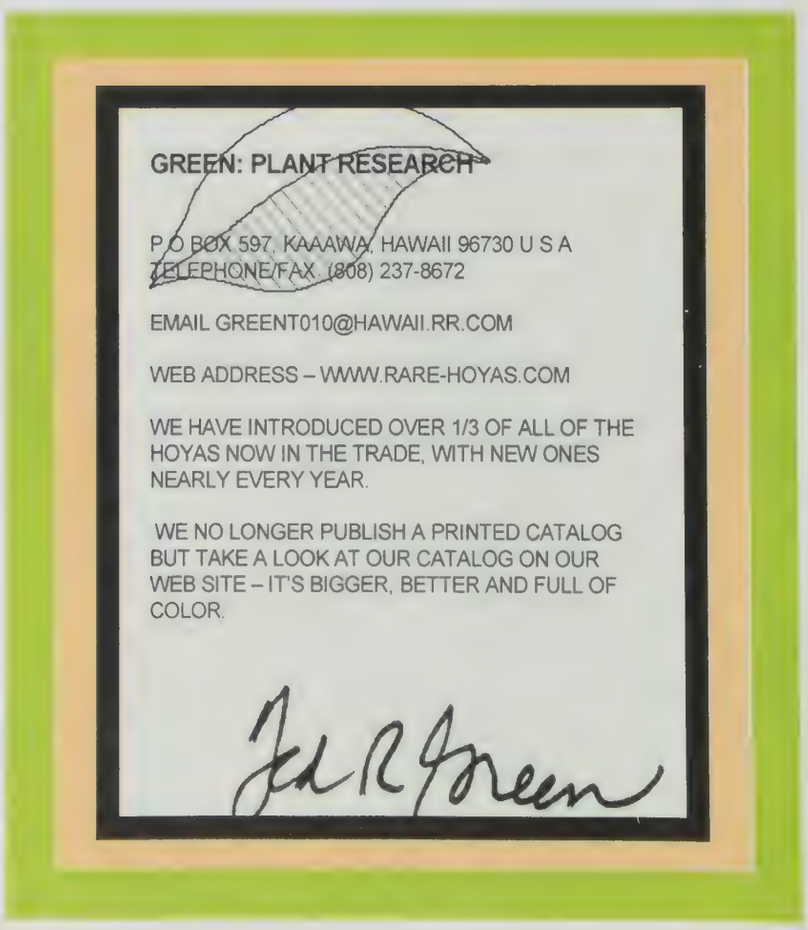
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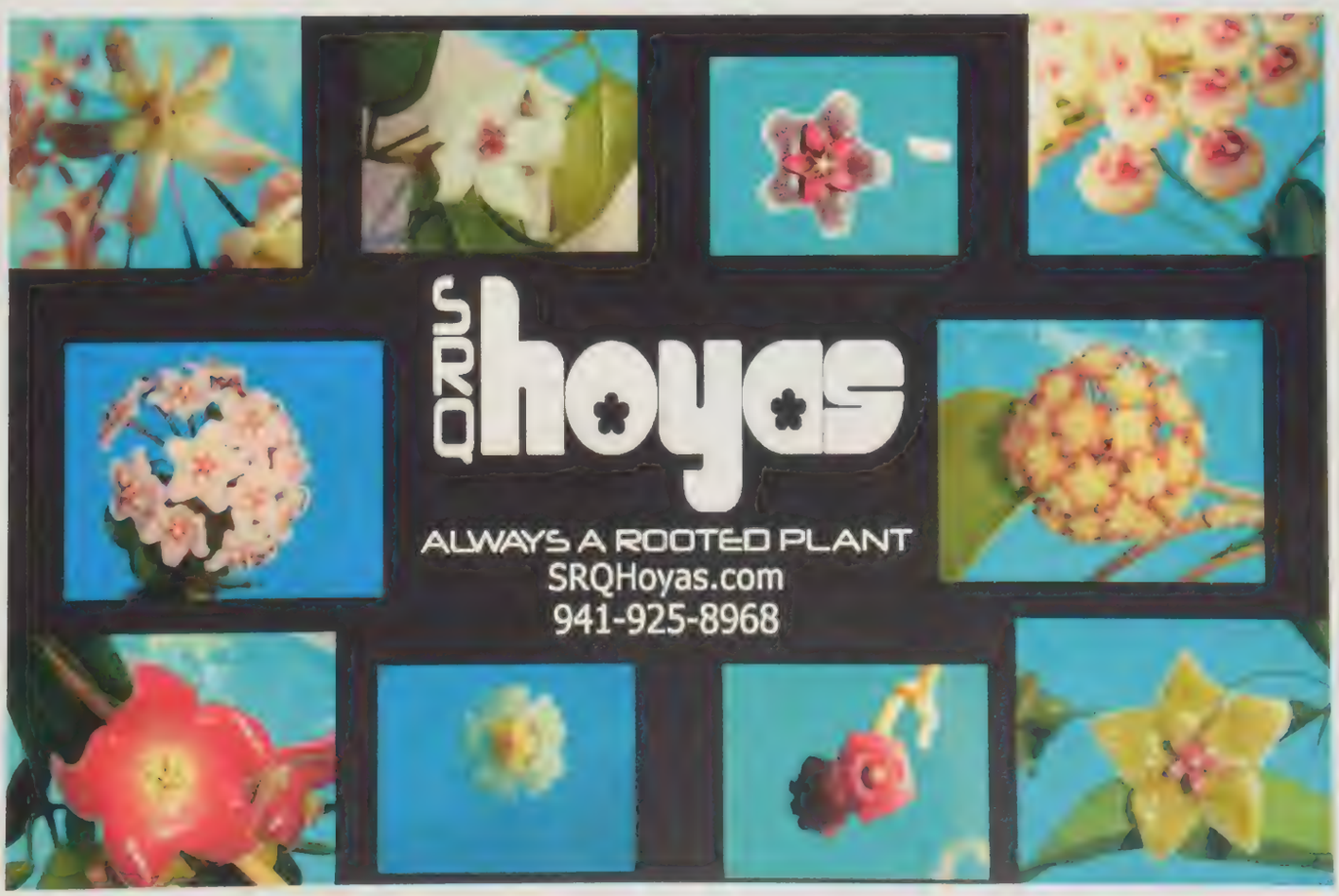

PHOTO GALLERY DESCRIPTIONS

Top Left

H. Dickasoniana *Kloppenburg*...This tiny plant is a true look alike to H. Bella *Hooker*, hence the name "wee bella" that this plant circulated as for several years. I'm not sure how it arrived in our hoya collections but I'm sure glad it did. It is, in my opinion one of the best of all the small hoya that have become available in the past ten years or so. The leaves are very small as is the entire plant but identical in shape and color to the larger plant of H. Bella. This plant is a great bloomer and is seldom without 5 to 10 umbels open at all times...Photo by Nancy Tibble

Top Right

H. Engleriana *Hosseus*...This tiny little hoya plant may be the smallest species in this genus, though I do have a few more that would be a real challenge as to which is the smallest. The velvet-like leaves of this species are about the size of a grain of rice. The flowers are quite long lasting, much larger than the leaves and pure white with rose red crown. I've always heard that this species requires cool temperatures, however my greenhouse can easily reach 85 degrees fahrenheit or more all summer, and they still bloom great and appear healthy and happy... Photo by Eva Karen Wiberg

Center Left

H. Walleniana *Kloppenburg*...Another small growing plant, about the size of H. Lacunosa *Blume*, however this is where the similarity ends. This species has gorgeous emerald green foliage that turns a beautiful mahogany color in bright light. The sparkling white flowers absolutely glisten. The crown is a nice carmine red and extremely waxy. A great selection for the hobby grower who loves semi-miniature plants...Photo by Ann Wayman

Center Right

H. Microphylla *Schlechter*...I've heard it said that this very small leaved hoya is the smallest of all the hoya species. I challenge that statement for the simple reason that I have two other hoya species that are at least as small, if not smaller than this hoya. Perhaps the growth pattern rather than the leaf size is what is refferred to as "the smallest". This plant has very tiny leaves and stems but grows very dense and quite long...Photo by Astrid Bostrom

Bottom Left

H. Caudata *Hooker*...I'm a little confused on this plant. The photo shown here was sent to me several years ago along with a photo of the entire plant showing the foliage and growth pattern of a smaller version of H. caudata (much smaller and crenulated leaf edges). A few years ago, I received several plants from David Liddle labeled H. Caudata. They all appear to perhaps be varieties of H. Caudata. Except for the size and shape of the leaves, all have the cardboard consistency of the H. Caudata that has been in our collections for the past 20 years or so. I believe the flowers in this photo are of ones on one of these plants...Photographer unknown

Bottom Right

H. Linearis *Wall. ex D. Don*...Everybody wants this hoya, very few can grow it! Including me. That is until I obtained a nice sized plant from my friend Eva Miles. When I received this plant a few years ago, it was about 12 inches long. It has thrived for me, even in my warm greenhouse and has grown to over 5 feet long. I had many buds form last fall but they all blasted. I now have it in a cooler spot in my greenhouse and am again seeing evidence of tiny buds forming. I will be the happiest woman alive if it continues on its present course and blooms for me...Photo by Alex Gavrus

PHOTO GALLERY

Hoya tsangii Burton

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FRATERNA

Official Bulletin Of The

Volume 23 # 3 INTERNATIONAL HOYA ASSOCIATION Jul-Sep 2010

Hoya cagayanensis *Schlechter*

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Story from our Cover Photo

By Ann Wayman

Hoya cagayanensis *Schlechter ex Burton*

Way back in about the year 2000, I decided to start studying all the many flowers that I had preserved in Kew solution over the years and possessed literally hundred's of small Tuperware cups with tight fitting lids lined up in rows on shelves in a spare closet. I don't remember which ones I started with but the identity of the first 20 or so that I looked at were identical to the writtten descriptions and many of the detailed drawings of Dr. R.R. Schlechter. After several days, I pulled the cup that contained flowers of CMF 8, a beautiful species from the Philippines and collected by Charles Marsden Fitch. All features of this species except the foliage seemed to fit the drawings of Dr. Schlechter's H. cagayanensis. I dismissed the difference in the foliage of his drawing as; probably just a different clone of the plant that was circulating. I admit that I "jumped the gun" and relabeled my plant as H. Cagayanensis without checking first with Dale Kloppenburg and others who were working on identifying plants. I featured a photo of the CMF-8 on the cover of Fraterna identifying it as H. Cagayanensis. After several months Dale contacted me and pointed out the structural differences in the reproductive parts between the two species, however the damage was already done and most people who had this plant had already changed the label to H. Cagayanensis. Since that time the real H. Cagayanensis has been discovered in the Philippines and is being cultivated by the Botany Dept. At the University of The Philippines at Manila. The original CMF 8 has been named and published as H. Fitchii *Kloppenburg*.

I do have H. Cagayanensis now and have shared a rooted cutting with another grower, so if all goes well there should be a limited number of cuttings available within the next year or so. All photos of H. cagayanensis were taken by Monina Siar. H. Fitchii photo by Ann Wayman.

H. cagayanensis *Schlechter ex Burton*

Photo by Monina Siar

H. fitchii *Kloppenburg*

Photo by Ann Wayman

On Growing My Hoya serpens

By Eva Miles

I obtained one small cutting of Hoya serpens from my friend and mentor Ruth Grenier in about 2002. The cutting was rooted directly into soil that I mixed myself which is probably the reason why the cutting took much longer to root than it would have in water. I must admit that I had no information on the culture of this wonderful little plant. It was well before I had the opportunity to purchase the great book, The World Of Hoyas, A book of Pictures by Dale Kloppenburg with Ann Wayman, in fact I believe it was a few years before that book was even printed.

The soil for growing my indoor plants I mix myself; one half of it is cactus mix, plus a bit less than one quarter each of vermiculite and perlite. I then add a handful of dried, crushed egg shells, some pumice and a handful of well broken up moss. I bake all this at 300° Fahrenheit for about 2 ½ hours. Stirring 2 or 3 times during the sterilization process. After cooling it is stored in a bucket with a tight fitting lid. This enables me to always have it on hand and to add what is necessary for different plants with varied requirements, such as more potting mix, moss and so on.

At the time I obtained the cutting of H. Serpens, I did not have a warm tropical room so it took that cutting about 3 ½ months to get growing. I find that even now, it grows very slowly, but it sure is worth waiting for! It is such a beautiful little plant without flowers and even more exciting when it blooms. The tiny (smaller than a dime), tiny, thick leaves boast a diamond dust texture that is outstanding and visible in any light. The leaves also have an interesting quilted texture.

I planted the small cutting of H. Serpens in a 3" clay pot. After it finally started growing, it put out leaves on very thin tendril like stems the rest of the year, even during the dark winter months of the year. In fact, when I placed the plant under Cromalux lights it promptly developed yellow leaves and dropped them, so I still have the plant at the window corner where it never gets any sun or very bright light.

One year after I planted it, H. Serpens formed fifteen umbels of flowers. OH, how gorgeous those flowers are as they open up! The waxy cream corona cradled in thick, soft velvety petals that are light creamy green, make the flowers look like jewels. Interestingly some flowers have four petals, four coronal scales, four anthers etc. While other flowers (about 80%) have five petals, five coronal scales and five anthers. The anthers are pinkish and lined with darker pink, with a dark line of very dark wine color in the retinaculum. The rest is yellow, forming a star right in the middle. I think anyone would be happy with such beautiful flowers but they also have a very sweet candy like scent. When open, each individual flower is much larger than the leaves and some of the umbels have as many as twenty flowers on them. When the plant is in bloom the leaves are barely visible. The photo shows the early stage of development of umbels and flowers. By the time this plant bloomed, it was about ten inches across.

H. Serpens seems to drop its peduncles some time after blooming and It forms new ones everytime it blooms. I spray the plant with a fine warm mist and wash it with a warm spray occasionally. I give this little plant extra care and always, and I mean always, water all my indoor plants with warm water.

This plant seems to be a rather slow grower, even though it has since been transplanted to a deeper four inch pot. It has not bloomed since then, so I figure that it needs to be root bound a bit (like many other blooming plants) before it begins to bloom again.

Hoya serpens *Hooker f*

Foliage & Flowers

Photos by Jonathan Miles

H. Serpens growing on pumice rock

Photo by Ann Wayman

Variation In Hoyas

If you don't think that there is a lot of variation within single species, I suggest that you look around at your neighbors and observe the vast amount of variation in the human species. It is true of many hoya species also. In general, many of the species we grow are single clones. They arise from one cutting taken from a wild plant, then propagated vegetatively and passed along from grower to grower. Fortunately, collecting in the wild adds to the introduction of additional clones and the genetic diversity at our disposal. Since hoyas are rapid growers, as opposed to orchids, and are asexually propagated for the most part, the chances for variations to arise even in a single clone can be great. With careful observation, we may be able to select and improve on existing clones. These variations are thought to be numerous, but only a few will ever be recognized and perpetuated. Many of the changes we see will be due to environmental factors and these changes are not permanent. Flowers developing under cool conditions, for instance will usually show more depth of color, more texture, and will not fade as rapidly as flowers developing in warm or hot weather. Also, in hot weather, flowers may show border color changes due to fading. It is with personal satisfaction for us all to grow our plants to the peak of their perfection, to obtain the largest floral clusters, the biggest and brightest flowers, and the healthiest plants possible. Aside from the environmental changes there is a good chance in rapidly growing plants like hoya to find true genetic changes ("sports" and "mutations"

Fortunately, there are collectors like David Liddle and Paul Forster in Australia and others who collect cuttings from many species within an area and over wide areas. This type of collecting adds to our genetic diversity within a species and thus adds to the future potential in selecting improved plants. Geoff Dennis in the Solomon Islands was another collector who took samples of a single species at progressive altitudes. Note clones in commerce, from Mt. Gallego, labeled Gallego #1 through #5 (the species now named *Hoya flavida* Forster & Liddle). Too often, without even seeing flowers on plants, collectors will bypass clones since they feel: "why collect another one of this species since I already have this species!"

It is abundantly clear that *Hoya australis* exhibits great variation and it is my belief that as more clones of other species are collected, we will find this type of diversity in those species as well. This is already evident in *Hoya nicholsoniae* and in *Hoya verticillata.* Color variations are evident in many of the clones that we already grow. It appears that minor variations under genetic control are the rule rather than the exception. This variation of hoya species lends itself to improvement of existing clones. This improvement can take many forms. I have mentioned selection of mutant types. Many species crosses, which have not yet been successful to my knowledge, are a wide-open field of endeavor for those who live in areas suitable to the natural production of pods (fertilization).

Selection within populations arising from "selfed" pods is a practical and at hand method of improving a species. I will assume here for simplicity's sake that most, if not all naturally occurring pods are the result of a plant being fertilized with its own pollen or pollen from thesame species. These are essentially "selfs", not hybrids. Plants arising from such crosses, however, may exhibit a lot of variation from which different or superior forms may be selected. In highly variable species like corn, wheat and barley to name only three, the major improvements in yield and quality have arisen

from selfed selection and/or modified hybridization, not from crosses between species. I have grown populations from hoya pods and selected from *Hoya pubicalyx* (Pink Silver or what we mistakenly then called pupureofusca). From one population I was able to select "Fresno Beauty" which I considered an improvement of *Hoya pubicalyx*. Growers in tropical areas are fortunate to live where pods form readily. These growers need to be encouraged to sell or otherwise supply seedpods to growers willing to grow large numbers of seedlings, from which superior selections can be made.

Plant breeding is a numbers game. The larger the populations one can select from, the greater the chances are of being able to select something desirable. From a single hoya pod we can grow 100 or more seedlings. This number varies considerably with the species involved. If we had the time and space, it would be better to grow 1,000 seedlings , the more the better. One can see that plant-breeding programs can evolve rapidly into occupying a lot of space, time, and money. Needless to say, you have to grow all these plants to flowering unless you have a limited objective such as distinctive foliage only. Be prepared that 99.9 % of the resulting seedlings will end up in the dump. Many will be like the parent or inferior, and only a few will have novelty or be superior. It takes a sharp eye and an ability to observe and remember differences in order to be successful in this endeavor. There has been concern expressed that a flood of inferior plants will be released or registered from this type of endeavor. It is my belief, however, that since we operate in an open market society, only improvements will survive the test of time.

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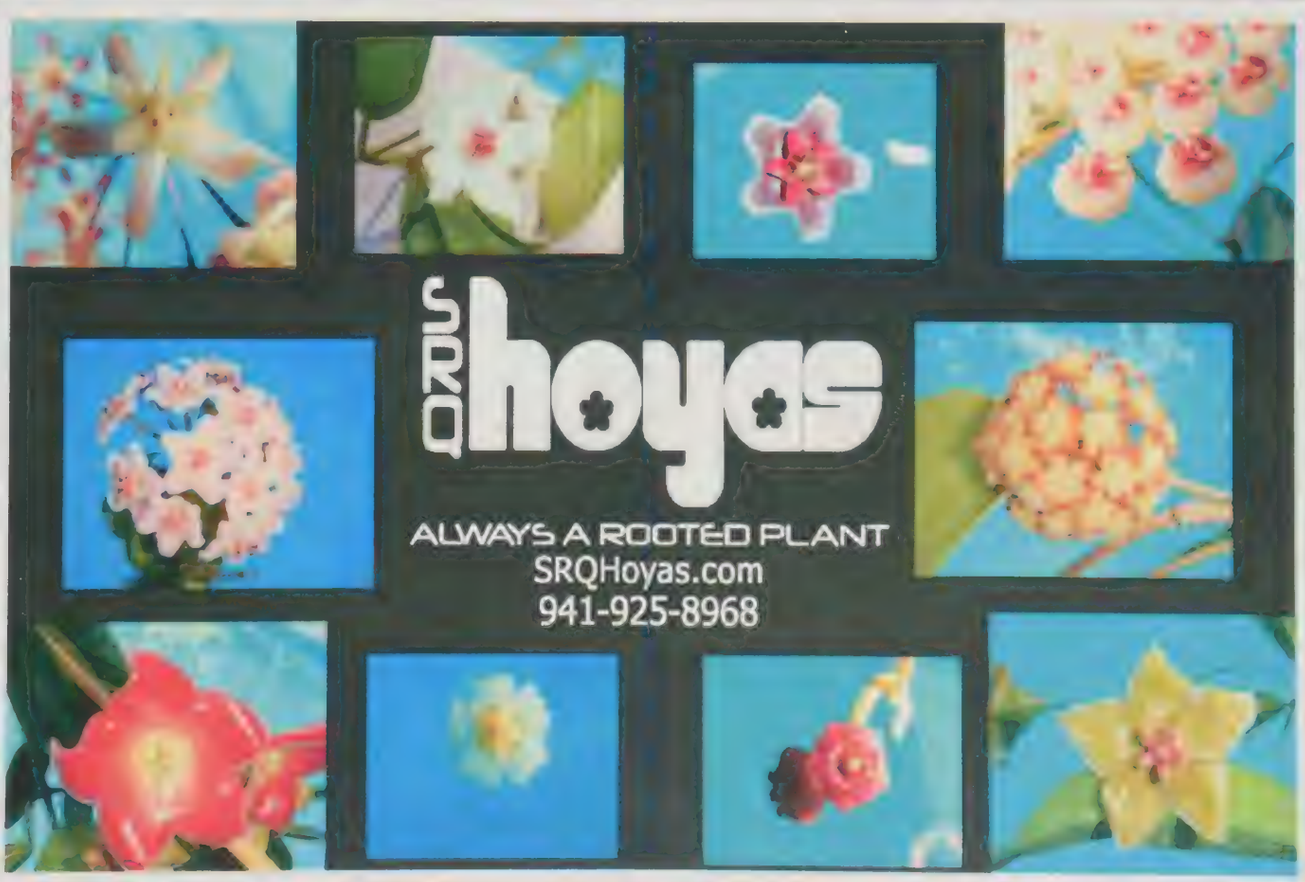

PHOTO GALLERY DESCRIPTIONS

Top Left

A hoya species that I know only as WMZ (for Welch Mountain Zoo). One of the most beautiful of the pure white hoyas. David Liddle has stated that this is H. Albiflora, and it certainly could be. The most outstanding of this hoyas features is the huge calyx that holds the flowers. Even when fully opened it almost covers the entire flower. Another dominant feature of these long lasting flowers is the wonderful fragrance that this species exude. Somewhat like H. Macgillivrayii but quite lemony: Photo by Ann Wayman

Top Right

H. excavata: A very impressive hoya species with large, rounded, medium green foliage. This is a species in the H. Diversifolia complex with heavy, succulent leaves. As a rule the species in this complex is not exceptionally pretty, this one however is the exception. The flowers are absolutely spectacular and beautifully colored dark rose pink with a large cranberry red corona. It's also one of the more prolific bloomers. It normally blooms twice a year in my greenhouse, once in early spring and again in the fall: Photo by Ann Wayman

Center Left

H. Cagayanensis (Schltr.) *Burton*: This species was described and a herbarium sheet made but was never published by Schlechter. Sometime during the 1990's it was published by Christine Burton but we still didn't have the plant in cultivation. Quite recently the species was discovered in the Philippines and is now being cultivated for sale sometime in the near future. It is a gorgeous species with beautiful, pure white flowers with a prominent yellow center and sturdy dark green foliage: Photo by Monina Siar

Center Right

H. Mindorensis *Schlechter*: A gorgeous white version of the better known red globe shaped mindorensis. Although very similar in its reproductive parts to the red version, this plant may someday be reclassified into a different species. The foliage is quite different from the red version. The flowers of this plant are normally white with long stiff hairs on the petals but once in awhile depending on the heat and growing conditions, it may be buff colored. The coronas are large and very dark red: Photo by Ann Wayman

Bottom Left

Hoya micrantha:: This is the plant that I know as H. Micrantha, however I have another plant with the label H. Micrantha with flowers (at least to the naked eye) that look identical but the foliage is quite different, being twice as long and almost lance shaped. The flowers are fairly small about 3/8 inches in diameter and soft pale pink with a dark carmine red corona. The heavy foliage is lush, dark green. Flowers several times per year. No detectable scent: Photo by Ann Wayman

Bottom Right

H. Obscuralongipedunculata Kloppenburg: How's that for a name? This is a typical H. Obscura flower, the foliage however is quite plain with no hint of the bronze coloring of the clone that we are accustomed to seeing, The surprising difference is in the extremely long peduncle's, often reaching six or more inches long, with large umbels of many flowers attached. The fragrance of this particular species is noticeable from its spicy scent that reminds me of Allspice: Photo by Alex Gavrus

PHOTO GALLERY

PHOTO GALLERY DESCRIPTIONS

Top Left

H. patella *Schlechter*: The picture says just about everything about this spectacular hoya species. The flowers are either white or pink, almost two inches across and a good grower and a great bloomer. The foliage is soft and slightly fuzzy. The only thing I can see wrong is that there doesn't seem to be any detectable fragrance. This plant doesn't seem to be fussy and will grow and bloom under just about any conditions, though it does like medium to high humidity, and blooms best in bright filtered light. Photo by Rosita Pettersson

Top Right

H. archboldiana *C. Norman*: Very large campanulate flowers with big, bold umbels of about five flowers sets this species apart from all but the spectacular H. macgillivrayi's. Like macgillivrayi's different clones come in many colors from light pink to deepest purple. The flowers are cup shaped (campanulate) and have a very solid texture which lends itself to the long lasting trait of these flowers. The foliage is rather plain but very lush, dark green. Photo by Ann Wayman

Center Left

H. davidcummungii *Kloppenburg*: This gorgeous, fairly new species was discovered on a small forest road leading to Lake Bulusan at the southern end of Luzon Island in the Philippines. This species is a very good grower and a distinctive free flowering hoya. The flower colors are flashy in that they are radiantly colored dark rose pink with a yellow corona and dark, ruby red radiating from the center and white or sometimes yellow stamens in the exact center. The foliage is lush dark green, smooth and glossy: Photo by Ann Wayman

Center Right

H. diptera *Seemann*: A real pretty hoya that deserves much more praise than it gets. The flowers of this species can truly be described as porcelain flowers, and are normally about ¾ inches in diameter. It will bloom each summer with 10 to 15 starry, extremely waxy flowers per umbel. The foliage is neat and clean looking. It's also very easy to grow. Although it can get quite large it can be kept in bounds with judiscious pruning which causes the plant to put out many side branches from which many more flower umbels are formed: Photo by Ann Wayman

H. Patella *Schlechter*

A beautiful picture of a full grown plant of the pink form of H. Patella: Photographed by Eva Karin Wiberg

H. Australis *R. Brown*

An absolutely gorgeous photo of a full grown plant of H. Australis in full bloom. Isn't she beautiful? Photo by Marcy Durst

H. Bella *Hooker*

I call this "Beautiful Bella" I have big plants of this species and they bloom with many umbels of flowers for most of the year. However, I had never seen a plant of bella so large and so full of blooms as this one. Photo by Tami Frank

PHOTO GALLERY

PHOTO GALLERY DESCRIPTIONS

Top Left

H. Erythrina *Rintz*: A foliage shot of this very pretty hoya. In bright light, this hoya can have leaves of many colors; green, pink, red, yellow, white and even brown. The flowers are bright yellow, rather flat, quite fuzzy and with turned under petal tips. It's not a consistant bloomer but when it does bloom, it usually has 15 or so umbels of these pretty yellow flowers that draws a lot of attention. The gorgeous foliage is what makes this plant a real show stopper. As is said of many hoyas "With foliage this spectacular, who needs flowers". Photo by Ann Strahm

Top Right

H. Shepherdii Hooker: One of the odder foliaged species in the hoya family, this plant has beautiful, long, thick, very shiny, stringbeanlike leaves. It doesn't sound very glamorous but a well grown plant is truly beautiful and can reach impressive proportions. The dainty flower petals are pale pink and quite fuzzy with a bright red corona. I lost five full grown plants one time from theft while I was running errands. I was only gone about an hour and when I got home, all five plants that I had hanging in my lath house were gone...never to be seen again. Photo by Ann Wayman

Center Left

This pretty, rather small plant was purchased back in 1987 as F-484. Since then it has become one of my many favorite hoyas and was said to be H. Pusilla by David Liddle, it certainly could be! The flowers though a little larger than the plant I got from David as pusilla appear to be identical, at least to the naked eye. The foliage is slightly different so it may have a varietal difference or like many plants, just a different clone of the same species. The flower petals are rose pink with white or very pale pink fuzz on the outer ends of the rolled under petals. The corona is bright lemon yellow with white stamens in the center. The fragrance is similar to cloves. Photo by Ann Wayman

Center Right

H. Macrophylla Blume: I purchased this plant in 1987 with this name, however the flowers seem to be much too small to be that species, so I'm not sure what it is. The leaves are quite large and almost heart shaped. The flowers are small but very pretty with many flowers per umbel. It blooms dependably several times a year with many flowers open at the same time. It looks nothing like the plant that I have of H. Polystachya, it also looks nothing like the variegated plant I have with the label H. Macrophylla variegata, which by the way has peduncles of anywhere from 3 to 4 inches long. Photo by Ann Wayman

H. Palawanica *Schlechter*

Purchased as H. Palawanica but not that species, just a very pretty unknown Philippine hoya species. The foliage is beautiful, the flowers are spectacular. Brilliant rose pink with a darker pink, very large corona. Photo by Ann Wayman

H. Gildingii *Kloppenburg*

I don't own this species. I have purchased cuttings several times but can't get it to root. It's certainly a beautiful hoya and I would love to have it in my collection. Maybe someday! Photo by Torill Nyhauus

H. Campanulata *Blume*

This species is often confused with H. Cystiantha (on the left) which has a very tiny cup shaped flower that seldom opens completely. The flowers of campanulata are buff colored to pale green with a small yellow corona. Photo by Ted Green

PHOTO GALLERY

ONE OF A KIND

Nothing like this has ever been attempted before! Dale Kloppenburg's wonderful text in "The World Of Hoyas" has been kept intact, while all the old black and white photocopies of herbarium sheets have been replaced by full page, full color photos of beautifully staged foliage shots with large photo insets of flower umbels that represent the particular species.

Some of the very best photographers in our organization have participated in the publishing of this book with many beautiful photographs, all labeled and correctly identified to the best of our knowledge.

If you have ever wondered what an entire plant, or even the leaves and growth pattern looks like when you see an especially beautiful umbel of hoya flowers, now is your chance. This beautiful book has been professionally bound in perfect binding with a semi-soft vinyl cover. contains 260 pages with several blank pages at the back for notes. Available now. Just $48.00 for the book plus $3.25 book rate postage in the U.S. Postage for priority mail anywhere else in the world is at present $13.50 U.S.

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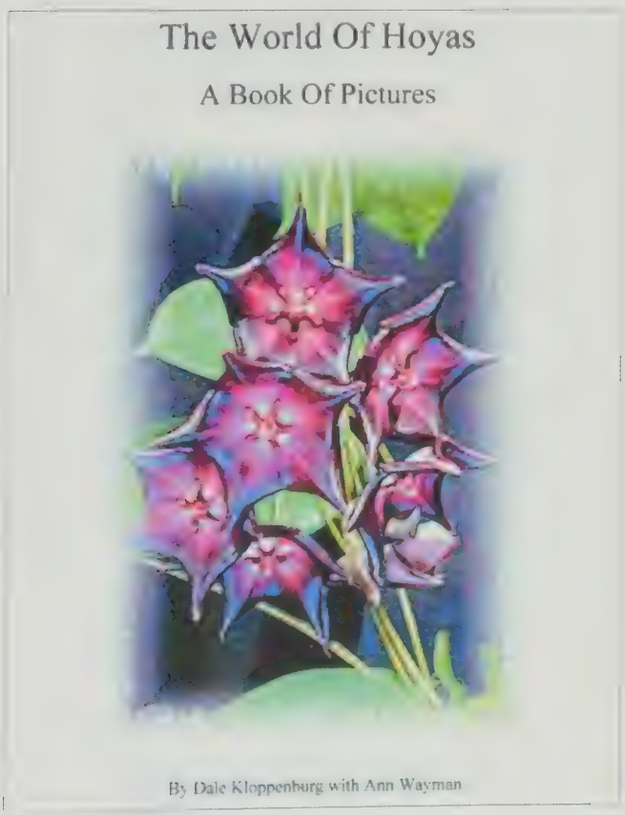

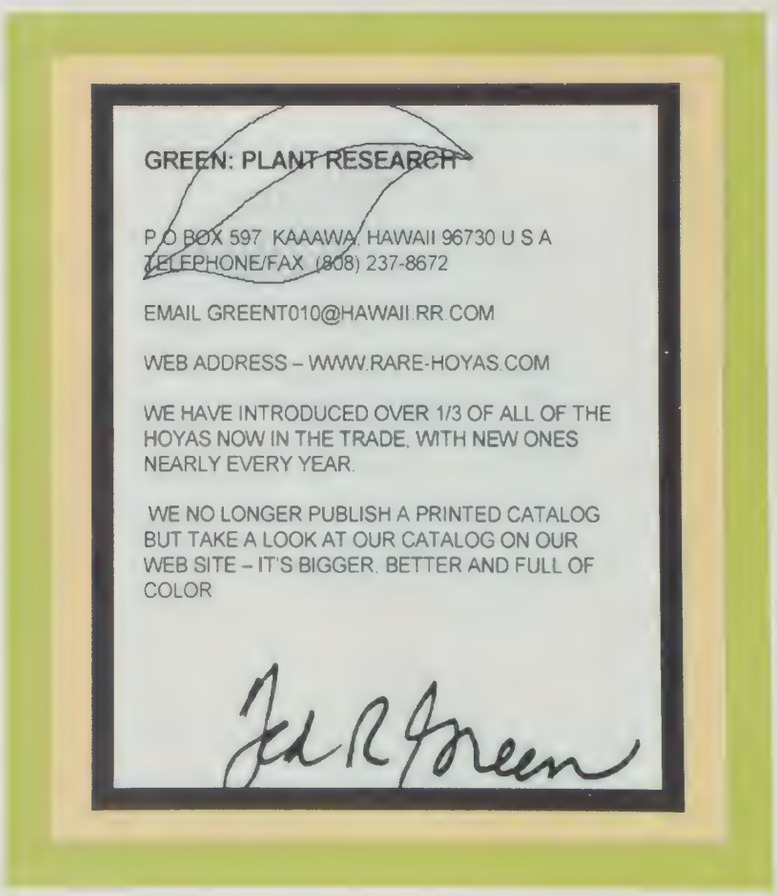
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Ted R Green

DON'T GIVE UP

It holds pretty true that for plants that produce a quantity of flowers in a head the more flowers = smaller flowers and conversely, less flowers = larger ones. This holds true for roses, hoyas, orchids, etc.

And, it also holds true that the robust plant produces larger and longer lasting flowers.

And it also holds true that be best display of flowers is in the middle of the natural season.

A case in point: The first clone of Hoya megalantha that we collected on Taveuni, Fiji, had a single, dark, rose-pink flower in bloom and it was about 1-1/4 in diameter. It was so obvious and outstanding that it was spotted about 10ft. off and 20ft. above the road. Although it was on the same road where Nathalie Simonsson collected it, at about the same elevation (3,400 ft.), but not in the position 300ft. off and below the road as she mentioned, and where she suggested we look.

The second time I collected was at a slightly lower elevation; about 3,100ft and the flowers of that clone, subsequently were a bit smaller.

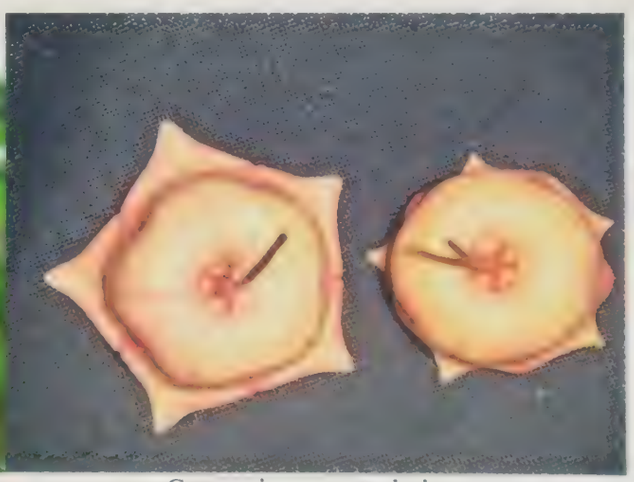
The area at that elevation was quite cool, with frequent rain and clouds and moss everywhere. We were worried that we could not duplicate the same conditions here for we have much more sunshine and a higher temperature.

We collected in February – supposedly the end of the flowering season.

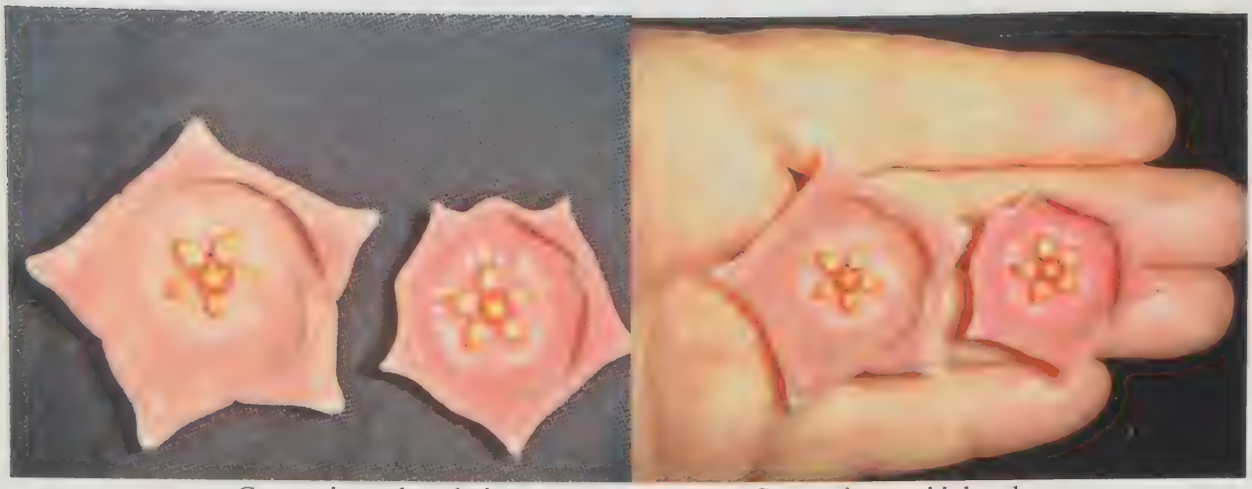
Now, having said all of that, let's look at our Hoya megalantha after 3 years under cultivation – here at our place in Kaaawa. Fist of all, it blooms anytime, all year round, and has from 2 to 10 flowers in an umbel and they may last a week. The color has now stabilized as a concolor, beautiful old rose. The leaves are smaller than those first collected (more light and higher temperature?) and the growth is more compact.

These pictures are from a Hoya megalantha growing in a 4 in. plastic pot and hanging where the sprinklers hit it twice a week and also intermittently watered with soluble 13-2-13 fertilizer. The stems are up to 4 ft. long and are twined around the supporting wire.

Umbel of 4 larger flowers



Comparison, ventral view



Comparison, dorsal view Comparison, with hand

This is really a collector's item and will make a good addition to any collection – especially of the discerning collector. One suggestion, give it good ventilation for some might find the musty smell offensive.

Don't give up! Maybe your plant hasn't reached its potential. Give it a chance!

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Hoya carmelae Kloppenburg, Siar & Ferreras

Photo by Ulysses Ferreras

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Back Cover		**An unidentified species from Teneba Pass**

A Note From The Editor

It's hard to believe that the year has spun by so fast and it's time once again to publish a few of the new species that have been collected and either identified or if they can't be identified as species that have been identified, named and published in the past, they are given new names. All of the five new species in this issue are from the Philippines where diversity among the different species abound.

I have been very busy this year with an outdoor plant sale where many of my old and dear plants were sold to make room for all the new things that are coming into cultivation almost faster than I can get them rooted and growing. I must admit that I had a lump in my throat each time one of these very old plants were sold. It was like losing a best friend. Many of them I have had for almost 30 years and grew them from small cuttings, however some were so big that I could no longer get them down from the rafters of the greenhouse to water, so they had to go. I did take cuttings from some of the favorites in case I decided I couldn't live without them.

I chose Hoya carmelae for the front cover of this issue, mainly because it was the best photo but also because it seems to be the most diverse of the five. I don't have any of these plants yet but they are growing happily in the greenhouses at the University gardens in the Philippines. I'm hoping to make arrangements to acquire these new species plus many of the others that are being collected from the hoya habitats of Asia and other parts of the world before they all get swept away in a giant tsunami or hacked down to clear the forests for roads and buildings.

Winter has arrived early here in Southern Oregon with many dark dreary days and lots of rain which we need, however it puts a halt to seeing blooms on many of the plants that I had wanted to photograph for the plant gallery. I think you will find however that the photos that I have selected are outstanding. If anyone would like to share their photos with our members, you can either send them to me as an attachment to an e-mail hoochymama007@hotmail.com or send the photo by regular mail (IHA, 4057 Carlton Avenue, Central Point, OR, 97502) and I promise to return them.

Ann Wayman

Hoya apoensis var. sagittarius Kloppenburg, Siar & Ferreras

Specimen collected by Ulysses Ferreras on Mindanao, South Cotabato Province, Tampakan Municipality, near Sagittarius Mining Inc. Base Camp. N 06° 28'29.4" E. 125° 03'29.0". Altitude 1.395 mas! Habitat: found growing in a low montane residual forest at the top of a hill. Forest patch less than half a hectare with understory planted with coffee. Intermediate adjacent area already converted to cornfield. Collection number UF 737. Via Dr. Simeona Siar in small poly bag, 1/22/10. 4 flowers on pedicels.

Hoya apoensis var. sagittarius Kloppenburg, Siar & Ferreras variety nova. Holotypus 71722 (CAHUP) hic designatus. Section Acanthostemma (Blume) Kloppenburg, similis Hoya apoensis Kloppenburg & Siar sed differt in parvis modo. Corollae color roseus non citreus: flos parvior 1.08 cm diametro applanatus versus 1.26 cm; pollinarium aliquantump differt.

This new variety is similar to Hoya apoensis but slightly different, the color of the corolla is rose red not bright yellow. The corolla flattened is slightly smaller and there are some minor differences in the pollinarium.

Photomicrographs of flower parts with measurements:

Pedicel: slightly curved, 1.5 cm long, terete, glabrous, 0.10 cm in diameter, slightly bulbous at the calyx. Enlarged about 25X.

Picture enlarged about 11X, bottom of calyx bulbous.

Calyx: small triangular sepals, triangular to sub-obtuse at apex, 0.11 cm long, 0.09 cm widest at base, glabrous, no overlap, ligules. Enlarged about 12X.

Overies: dome shape tapering to apex, glabrous, 0.15 cm long, 0.10 cm wide at the base.

Outside view of the flower showing pedicel and calyx attached.

Corolla: rotate ends recurved to revolute, glabrous outside, slick, inside pubescent with prominent cells pointing centrally, apex inside glabrous, inside at central area slight pentagonal distinction with slight easing of puberulance. Enlarged about 12X

Sinus - sinus	0.30 cm
Sinus - center	0.26 cm
Sinus - apex	0.39 cm
Apex - center	0.54 cm
Widest	0.35 cm

Above: photo outside surface of the corolla.

Left: inside surface of the corolla enlarged ca. 12X

Corona: bilobed, inner lobe narrow spatulate, outer lobe obtuse, bilobes flat near lobes and bending inward and touching at outer apex with rounded ends, sulcate. Channeled below narrow with large open center and thickening of short central column, hair cells around column base. Enlarged about 13X.

Apex - apex	0.18 cm
Apex - center	0.20 cm
Center - bilobes	0.23 cm

Bilobe extensions	0.06 cm
Ret. - ret.	0.06 cm
Ret. - center	0.06 cm
Aw. - aw.	0.16 cm
Aw. - center	0.15 cm

Enlarged about 14X

Left: bottom view of the corona; below: dorsal view of the corona

Leaves glabrous, pinnate nervation ca. 38° to midrib, cuneate base, elliptic, apex acute to sub apiculate. Leaf measurements at the end taken from herbarium sheet by Dr. Simeona Siar.

Caudicle

bulb diam. 0.09 mm

Pollinium

length 0.35 mm

widest 0.08 mm

Retinaculum

length 0.13 mm

shoulder 0.08 mm

waist 0.06 mm

hip 0.08 mm

ext. -0.04 mm

Translator

length 0.15 mm

depth 0.04 mm

x. CAHUP 71722 (Philippines UF 737)

Leaf sample	Length (cm)	Width (cm)
1	7.60	2.70
2	7.60	2.60
3	9.30	2.40
4	*9.60*	2.50
5	8.10	*3.20*
6	7.30	2.30
7	8.90	2.80
8	7.10	2.00
9	6.30	2.50
10	*5.90*	*1.80*
Mean	**7.77**	**2.48**
Range	***5.90-9.60***	***1.80-3.20***

Hoya carmelae Kloppenburg, Siar & Ferreras

This New hoya species was collected by Ulysses Ferreras in March 2010 on Luzon, Island, Philippines, Province of Isabela, Municipality of Maconacon, Brgy. Reina Mercedes, Mt. Pinalinaw, Altitude 1.100 masl. The collection number is UF 782.

This new hoya species in named in honor of Carmela Española, the expedition leader of the group that traversed the Sierra Madre in February 2010. In local conservation circles, she is known best for the discovery of the Calayan Rail- a new species of the bird in one of the small islands in North Luzon. She is currently doing research on parrots in the whole island of Luzon where she sometimes eggs Ulysses on to go in some select expeditions on localities that particularly interest him. She is undoubtedly one of the leading ornithologists in the Philippines today.

Hoya carmelae Kloppenburg, Siar, & Ferreras species nova. Typus 14598 (PUH) hic designatus. Calycic segmentis linear-ovatus obtusis, glabris 0.10 cm longis. Corolla usque infra medium 5-fida rotate, extus et intus glabra fere 0.86 cm diametiente, lobus late ovatis, acutis fere 0.30 cm longis. Coronae foliolis horizontalibus angulo interiore longi anguste spatulatus, antherae incumbentem et angulo exteriore obtusiusculum lobis apice bi-ligulatis incurves obtusis.

The pictures and descriptions below show how unusual this species is, it has long narrow inner coronal lobes that are spathulate and cover the anthers, the outer lobe has two ligule like lobes infolded at the apex one covering the other and the end appears obtuse. The coronal lobes have very granulate surface areas and are thin in their central portions.

Pedicel: and calyx enlarged ca. 31X, pedicel terete, glabrous, strict, 1.6 cm long and diameter 0.06 cm.

Calyx: lobes near linear, do not nearly reach the corolla sinuses, glabrous in and out, outside surface granulate, sepals 0.10 cm long 0.06 cm widest, slight basal overlap, no ligules seen. Base bulbous.

Ovaries: columnar, glabrous 0.10 cm tall base pair 0.07 cm. wide.

Outside surface of the corolla enlarged about 14X. Lobes are deeply cut, glabrous, thin in texture. Surface is glabrous.

Sinus – sinus	0.13 cm
Sinus – center	0.11 cm
Sinus – apex	0.34 cm
Apex – center	0.43 cm.
Widest	0.27 cm

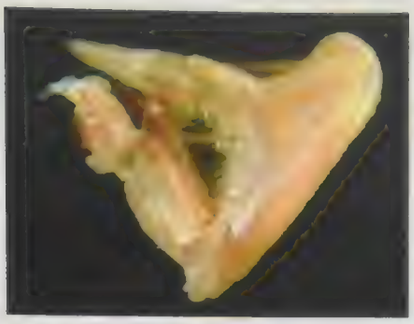
Inside surface of the flower with corona. Corolla inner surface is glabrous. Coronal lobes exceed the corolla sinuses.

Apex – apex	0.24 cm
Widest	0.09 cm
Ret.- ret.	0.06 cm
Ret. – center	0.05 cm
Aw. – aw.	0.11 cm
Aw. – center	0.11 cm.

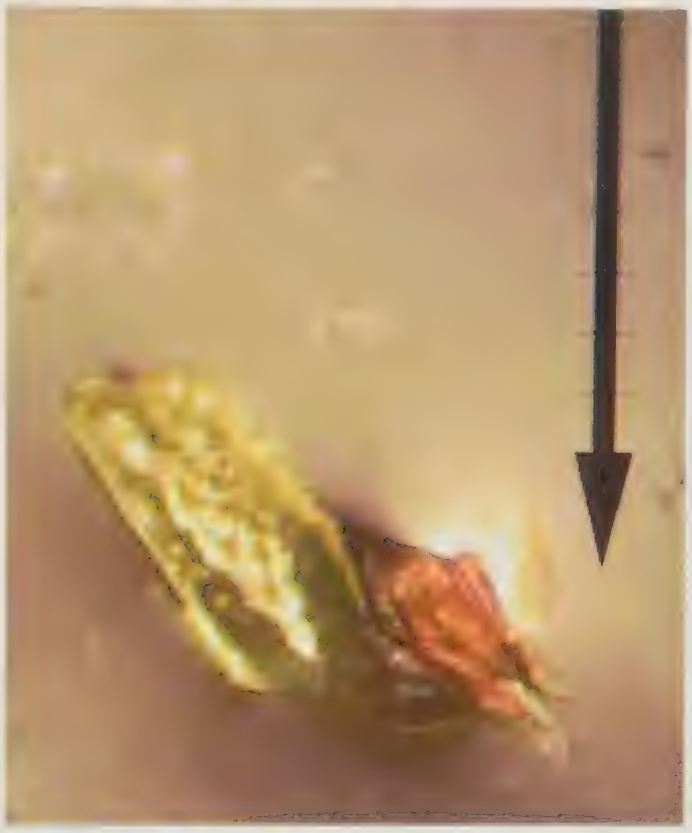
Bottom view of the corona enlarged about 40X. The coronal surface as well as the shape is unusual. Surfaces are sulcate-granulate, lobes appear to be channeled. Al surfaces are glabrous.

Corona top view of center, surface is granulate-sulcate, inner lobes are drawn out long narrow spatulate, touch in the center, anthers visible between the lobes, the dorsal is horizontal with a concave area near outer apex. Enlarged as above.

Enlarged 23X to show the coronal lobe outer apex that is unusual in hoya species, Most visible on upper left lobe apex. The sides at the apex are turned in over each other, surfaces As mentioned above are also unusual.



Side view of a coronal scale enlarged ca. 30X. Note the dorsal edges rolled and wider near the outer apex also the concave areas below this and how thin it is forward (left). The thickest depth is 0.18 cm. Inner lobe stretches over the anther and is spatulate, horizontal.



Pollinarium enlarged about 130X

Pollinium

length	0.35 mm
widest	0.16 mm

Retinaculum

length	0.17 mm
shoulder	0.11 mm
waist	0.06 mm
hip	0.07 mm.
ext.	0.06 mm

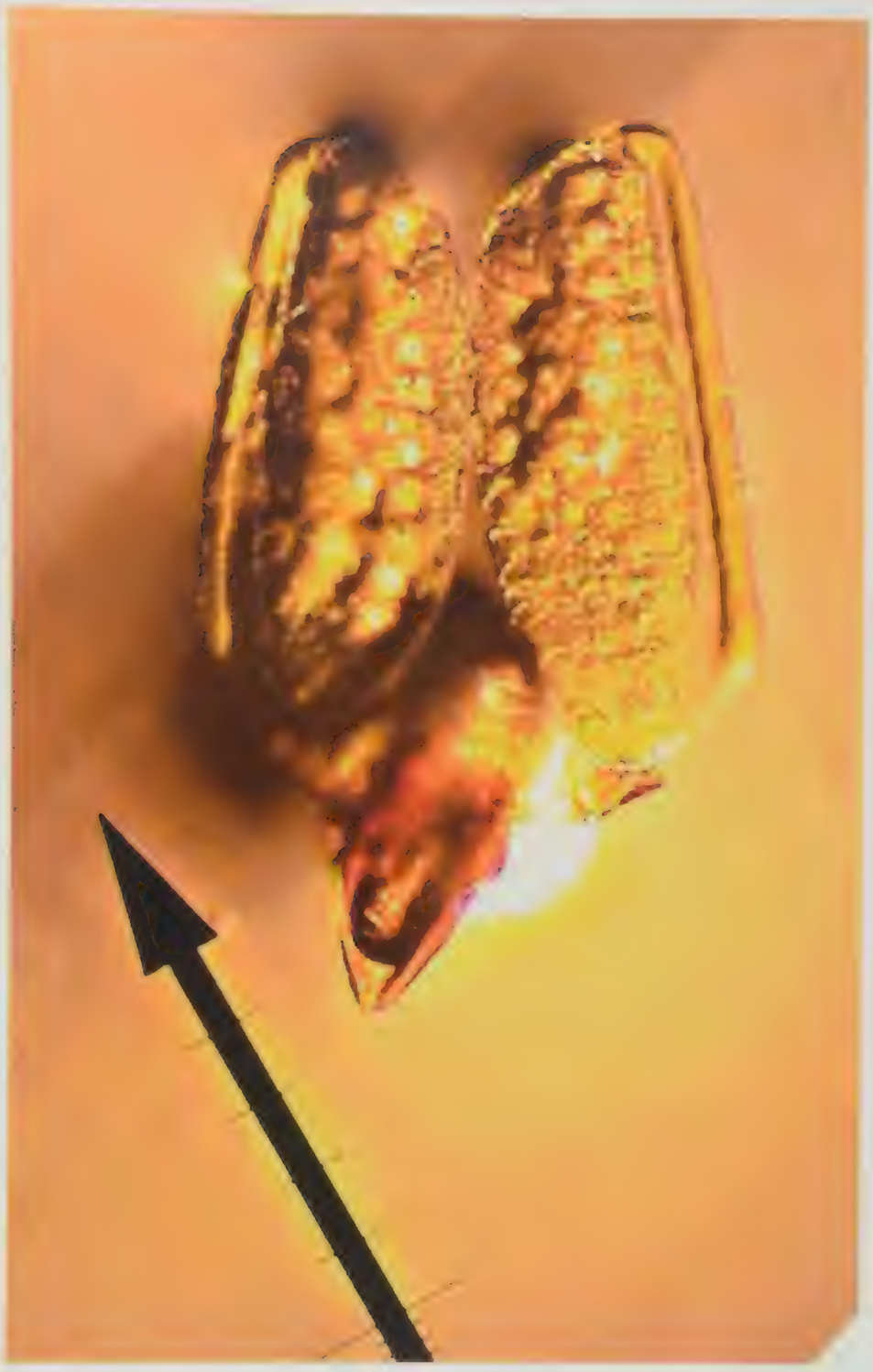
Translator

length	0.13 mm
depth	0.04 mm.

Caudicle

bulb diam.	0.05 mm

Picture via Ulysses Ferreras



Pollinarium enlarged about 220X to better show the pollinia.

The pellucid edgier relatively heavy (thick), ends before tapering to the translators. The translators extend to about the center of the pollinium attachment end.

UF 782	Leaf 1	Leaf 2
Leaf Length	14	14
Leaf Width	9	10
Petiole	0.2	0.3
Peduncle	0.1	
Stem Diameter	0.2	

Leaf measurements in centimeters.

Holotype herbarium sheet below. Picture sent by Ulysses Ferreras the collector.

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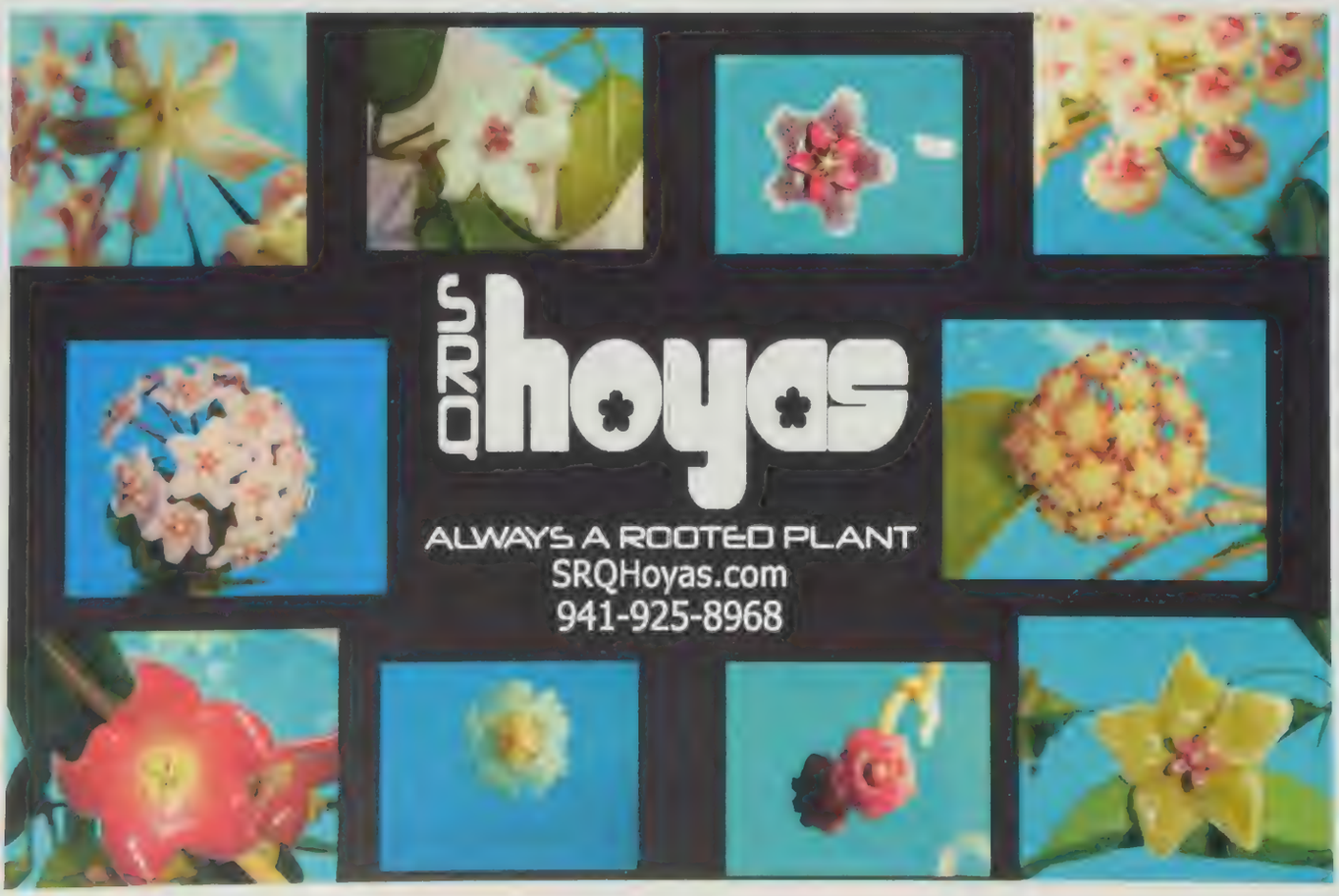


Hoya corazoniae Kloppenburg, Siar & Ferreras

Hoya corazoniae, Kloppenburg, Siar & Ferreras sp nova Typus 14601 (PUH), hic designatus. Hoya section Acanthostemma (Blume) Kloppenburg similes *Hoya apoensis* Kloppenburg & Siar 2011 in Asklepios sed differt. Foliis elipticus vel subobovato-ellipticis acuminatus, glabris: nervis pinnatis 6-9 cm longis, medio velsuper 1.9-2.9 cm latis. Umbelliformibus multifloris 30 +/-, pedunculo 7 cm longo. Calycis segmentis ovatis obtusis 0.09 cm longis; corolla 5-fida rotate, exits glaba, intus pubescenta cirs. 1 cm diametiente, lobas late ovatis, acutis circ. 0.37 cm longis. Coronae foliolis apicem versus adscentibus, lobus interiora spatulate; apice externo obtuso, cum bifida apicem appendice hyaline.

This Hoya sp. was collected by Ulysses Ferreras at Davao del Sur, Mindanao, Philippines. His collection number is UF 800. 2 flowers sent via Dr. Simeona Siar in a small zip bag July 2010. It is named for Ulysses's mother who was instrumental in motivating his interest in plants and taxonomy.

Pictures and measurements below.

Pedicel: enlarged ca. 45X. It is curved, terete, glabrous, 1.5 cm long 0.06 cm in diameter.

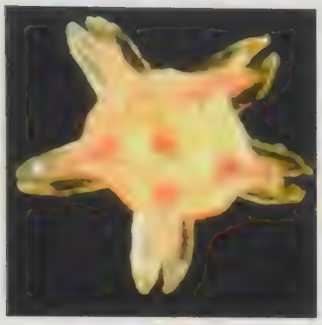
Calyx and ovaries enlarged ca. 31X. The sepals are small do not reach the corolla sinuses and are membranous, 0.09 cm long and wide, overlap about 1/3, glabrous on both surfaces, ovate apex obtuse. Dark ligules are present.

Ovaries: short dome shaped, glabrous 0.06 cm tall and base pair 0.08 cm wide.

Corolla; outside surface enlarged ca. 10X. This surface is glabrous.

Sinus – sinus	0.31 cm
Sinus – center	0.25 cm
Sinus – apex	0.37 cm
Apex – center	0.49 cm
Widest	0.32 cm.

Corolla: Inside surface enlarged as above. This surface is scattered pubescent. Corona is bi-lobed with the lobes long and reach the corolla sinuses, inner lobes cover the center, are raised and spatulate, outer lobe is short ending abruptly and is sub-obtuse, dorsal is concave, edges sharp, thin.



Corona: bottom (ventral) view enlarged ca. 15X. Lobes are channeled from apex of the bilobes inward to even with the anther wings that have rounded under edges, center is a thickened column, all surfaces are glabrous.

Corona dorsal surface enlarged ca. 18X, bi-lobes are greatly extended rather thin in texture with linear surface sulcations, the normally meet at the apices. Anther wings protrude and have thickened rounded edges.

Apex – apex	0.15 cm
Apex – end	0.24 cm
Widest	0.09 cm
Ret. – ret.	0.04 cm
Ret. – center	0.04 cm
Aw. – aw.	0.15 cm
Aw. – center	0.13 cm

Pollinarium enlarged ca. 80X.

Pollinium

length	0.34 mm
widest	0.12 mm

Retinaculum

length	0.10 mm
widest	0.09 mm

Translator

length	0.07 mm
depth	0.02 mm

Caudicle

bulb diam.	0.06 mm

Leaves: elliptic-lanceolate to sub oblanceolate, glabrous, opposite, base cuneate apex acute, nervation pinnate 6.0 – 10 cm long, 1.7-2.6 cm widest. Leaf measurements below in centimeters.

UF 800	Leaf 1	Leaf 2	Leaf 3
Leaf Length	6.8	6.3	10
Leaf Width	1.7	2.1	2.6
Petiole	0.6	0.6	0.6
Peduncle	6		
Stem Diameter	0.1		

Below a photo of the type sheet provided by Ulysses Ferreras the collector of this new hoya species.

HERBARIUM
HOLOTYPE
PHILIPPINES UF 800 8 April 2010
APOCYNACEAE-ASCLEPIADOIDEAE
Hoya sp.
Mindanao, Province of Davao del Sur, Municipality of Kiblawan Brgy. Kimtawis, Mt Bololomot loco dicto Baldang!
Alt 1 201 masl
Habitat Old growth lower montane forest on a ridge dominated by large diameter Dacrycarpus imbricatus
N 06º 51551
E 125º 14175
Photo taken
Replicates None
Collector Ulysses Ferreras

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Hoya ferrerasii Kloppenburg & Siar sp. Nova

This new hoya species was collected by Ulysses Ferreras at 648 masl (2,126') at Brgy. Kimlawis, Municipality of Kiblawan, Davao del Sur dangling from a Villebrunea rubescens tree along a forest streem. "The residual forest from which I collected it is only less then a hectare as the native B'laan tribespeople had already converted the surrounding areas into cornfields. I think UF 741 is confined to this elevation as we had surveyed surrounding areas at higher elevations but found no trace of it." Hoya sp. UF 741 was sent to me in poly bag from Dr. Simeona Siar 1/22/10, 3 flowers with pedicels (RDK).

Hoya ferrerasii Kloppenburg & Siar sp. nova, Typus 71723 (CAHUP) hic designatus, similis Hoya bicolensis Kloppenburg sed pedicillus et sepala externus pubescens versus glabra, corolla magis scissus; clayces ligulae singulatim non dulplicatus; retinaculum longior 0.18 cm versus 0.08 mm, differt.

This new species is similar to Hoya bicolensis Kloppenburg but different, the pedicels and sepals outside surfaces are pubescent not glabrous, the corolla is more deeply cut and the ligules of the calyx are singular not doubled, the retinaculum is much shorter.

Below are photomicrographs:

Pedicels: strict, 1.5 cm long, terete, 0.08 cm in diameter, finely ciliate (puberulous), enlarged at the calyx base. Enlarged about 29X.

Calyx: sepals very small, does not reach the corolla sinuses, triangular, apex sub acute, 0.09 cm long, widest 0.07 cm outside puberulous, inside glabrous, very small ligules. Enlarged about 10X.

Ovaries: short domed, glabrous, 0.06 cm tall and 0.05 cm wide at pair base. Enlarged about 22X.

Corolla: rotate, deeply cut, outside glabrous, inside finely granulate glabrous. Enlarged about 10X.

Sinus – sinus	0.24 cm
Sinus – center	0.20 cm
Sinus – apex	0.39 cm
Apex – center	0.50 cm
Widest	0.33 cm at center.

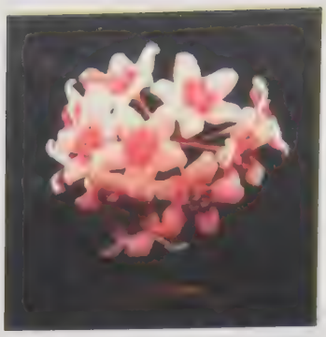
Corona: dorsal scale concave, with forward umbo, inner lobe finely dentate does not reach the center, lobes exceed the corolla sinuses, outer apex acute, corona flat, anther wings and retinacula plainly visible. Channeled below with sides rolled under, diagonally sulcate, center with a collar, thin up to 0.06 cm long. Enlarged about 11X.

Apex – apex	0.29 cm
Apex – center	0.29 cm
Widest	0.12 cm
Ret. – Ret.	0.07 cm
Ret – center	0.06 cm
Aw. – Aw.	0.15 cm
Aw. – center	0.15 cm

Leaves: triplinerved, obovate, glabrous, apex acuminate, base cuneate to narrowly obtuse.

Measurements from the herbarium sheet made by Dr. Simeona Siar at the end.

Side view of a coronal scale enlarged about 28X. Anther wing is fairly deep; scythe shaped. Also the outer lobe apex is raised.



Pictures of the flowers by Ulysses Ferreras.

Pictures of portions of the Type sheet reduced.

Enlarged about 119 X.

Pollinium:

length 0.39 mm

widest 0.18 mm

Retinaculum:

length 0.18 mm

shoulder 0.10 mm

waist 0.06 mm

hip 0.08 mm

ext. 0.02 mm

Translator:

length 0.10 mm

caudicle: bulb diam.0.05 mm

Translators delta shaped.

y. CAHUP 71723 (Philippines UF 741)

Leaf sample	Length (cm)	Width (cm)
1	7.80	*4.00*
2	7.60	3.40
3	*8.10*	3.50
4	*6.70*	*2.90*
5	6.80	3.10
6	8.00	3.70
Mean	**7.50**	**3.43**
Range	***6.70-8.10***	***2.90-4.0***

Hoya kanlaonensis Kloppenburg, Siar & Ferreras

This new hoya species was collected by Ulysses Ferreras on the Island of Negros, province of Negros Oriental, city of Bago, Brgy. Mailum, at the Energy Development Corporation 2 hectare Permanent Forest Dynamics Plot. Altitude 1223 masl. Habitat: lower monatne forest with many tree species present (see notations on Holotype sheet at the end). Collection number UF 771, is named for Mt. Kanlaon an active volcano and the highest peak in the Visayas region.

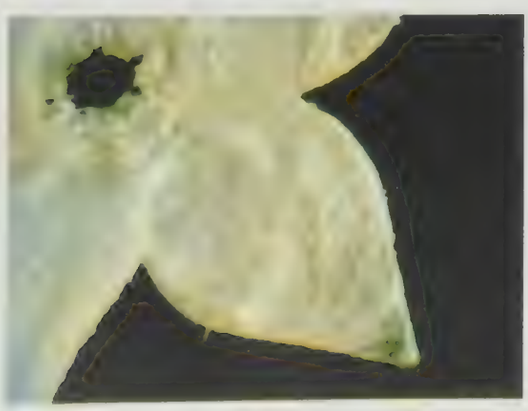
Hoya kanlaonensis Kloppenburg, Siar & Ferreras spcies nova, Typus 14600 (PUH), hic designatus. Similia *Hoya panayensis* Kloppenburg & Siar, Fraterna 2010 sed pedunculo 1 cm longo vs. 2.3 cm; calyx lobi longior 0.18 cm vs. 0.12 cm, differt. Section Acanthostemma (Blume) Kloppenburg species foliis elipticus, glabris, nervis pinnatis 6-9 cm longis medio 1.9-2.9 cm latis: corolla revolutus, exits glabra intus pubescentis 1.04 cm diametiente complinatus.

Micro-photos and measurements of parts follow:

Pedicel: enlarged ca. 19X. It is curved, terete, glabrous, 1.0 cm long and 0.11 cm. in diameter.

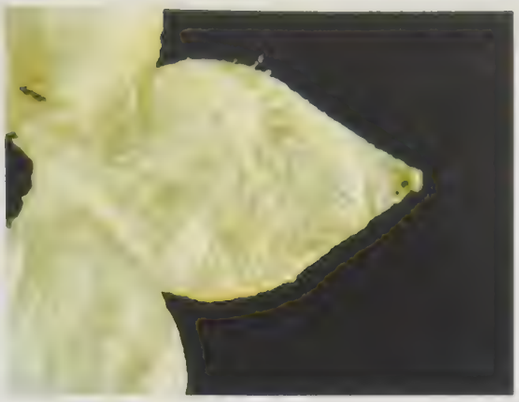
Calyx: with ovaries on the pedicel, inside view enlarged ca. 12X. The sepals are membranous, broadly ovate, apex obtuse, glabrous, sub-ciliate to ragged edged. ½ overlap, ligules present, 0.18 cm long x 0.15 cm at the widest.

Ovaries: columnar, glabrous 0.10 cm. tall and base pair 0.08 cm. wide.



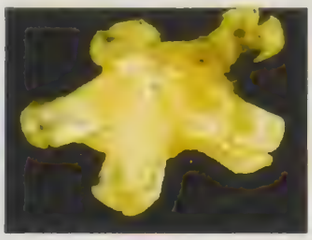
Outside surface of the corolla enlarged ca. 16X. This surface is glabrous, texture thin, center collar only slightly thickened, apex acute.

Sinus – sinus	0.30 cm
Sinus – center	0.26 cm
Sinus – apex	0.42 cm
Apex – center	0.52 cm
Widest	0.36 cm

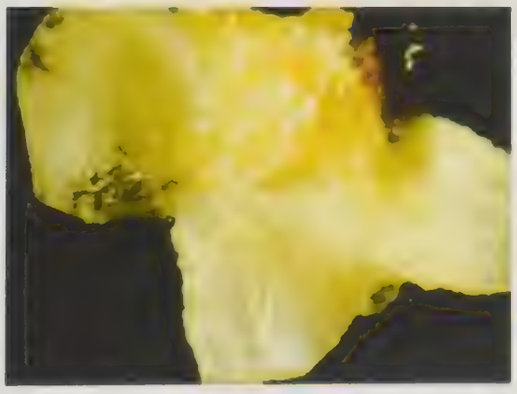


Inner corolla surface enlarged as above, surface is pubescent except for the apex which is normally curved under on a rotate configuration. Lobes are deeply cut.

Bottom side of the corona enlarged ca. 15X. The object is a little skewed due to shipment, lobes are bi-lobed, glabrous on all surfaces, channeled all the way to lobe apices. Bi-lobes extend considerably beyond lobe proper. Center is columnar slightly thickened. The lobes do not reach the corolla sinuses.



Dorsal surface of the corona enlarged as above. Center is raised and covered by the spatulate inner coronal lobes, outer lobes are short concave near outer apex that is obtuse, bilobes are cupped after the corona apex turned to meet at the ends surfaces are sulcate.



Dorsal view of a flower enlarged ca. 16X. The coronal lobes do not reach the corolla sinuses.

Apex- apex	0.15 cm
Apex – ends	0.25 cm
Bilobes	0.10 cm
Widest	0.10 cm
Ret. – ret.	0.07 cm
Ret.- center	0.07 cm
Aw. –aw.	0.15 cm
Aw. – center	0.15 cm

Leaves: elliptic, base cuneate, apex long acute, glabrous, pinnate nervation: 9.0 – 12.8 cm: long 2.0-3.0 cm wide. Petioles long ca. 1.3 cm. Peduncle long ca. 8 cm long.

UF 771	Leaf 1	Leaf 2	Leaf 3
Leaf Length	12	12.8	9
Leaf Width	2.3	3	2
Petiole	1.7	1.7	1.5
Peduncle	9		
Stem Diameter	0.2		

Pollinaria enlarged ca. 180X

Pollinium

length	0.42 mm
widest	0.20 mm

Retinaculum

length	0.15 mm.
shoulder	0.10 mm
waist	0.09 mm
hip	0.10mm
ext	0.06 mm

Translator

length	0.20 mm
depth	0.03 mm

Caudicle

bulb diam.	0.10 mm

PHILIPPINES UF 771 18 February 2010
APOCYNACEAE-ASCLEPIADOIDEAE
Hoya sp.
Island of Negros, Province of Negros Occidental , City of Bago, Brgy Malum, Energy Development Corporation- 2 hectare Permanent Forest Dynamics Plot
Alt. 1,223 masl
Habitat: Lower montane forest with trees represented by Celtis, Syzygium, Madhuca, Canarium, Bhesa, Platea, Aporosa, Agathis, Lithocarpus, Decrycarpus, Acer etc.
Vine with scentless flowers
Photo taken
Replicates: None
Collector: Ulysses Ferreras
HOLOTYPE

Photo of Holotype herbarium sheet taken by the collector Ulysses Ferreras.

PHOTO GALLERY DESCRIPTIONS

Top Left

The very beautiful "Iris Marie" This cultivar appeared in the collection of David Liddle several years ago and from my understanding, it is suspected to be a hybrid cross between H. Leucorhoda and H. Schneei. It would probably have been a chance cross by some insect as I don't believe David was into cross pollination of hoyas. This is no doubt one of the best of the hoya hybrids that I have seen. The foliage is sturdy, clean and neat looking, the flowers are gorgeous and very long lasting. The first time that it bloomed it had only one umbel but it bloomed again about two months later with four umbels of ten flowers each. I really like this plant! Photo by Ann Wayman

Top Right

Hoya odorata *Schlechter:* The first plant that I ever saw of this species was growing in a large hanging basket on Ted Greens front porch in Hawaii. It had well over 50 umbels of beautiful yellowish green flowers and the citrus fragrance was unbelievable. I had to have this species! As soon as I got home I ordered cuttings which rooted and started growing very fast. I waited anxiously for several years before seeing it bloom, It has been worth the wait. The flower petals are sparkling sugar white with a very upright greenish yellow corona, they are quite large and just as I remembered the fragrance is heavenly. Photo by Ann Wayman

Center Left

Hoya fuscomarginata: I don't know where this hoya came from or who collected it. The leaves are huge and beautifully splashed with white, pink and some brownish yellow and true to its name, has deep purple edges. The flowers are large, pale yellow with a flat, dark pink corona. Some say the flowers have a bad odor but I can't detect any odor to it at all. It blooms for a couple of months every year. Photo by Ann Wayman

Center Right

This was a species that I purchased from Dale Kloppenburg as a cutting back in 1987. As far as we knew it was just an H. Carnosa but with extremely large plain green leaves and beautiful pink flowers. Dale had nick-named it "Dee Dee's Big One", named for the lady that he got his cutting from. Dale has determined that this plant displays a distinct difference from H. Carnosa and plans to publish it soon with a name of its own. Photo by Ann Wayman

Bottom Left

Hoya caudata *Hooker*: This is a hoya with truly fantastic foliage. The leaves are large with a texture like cardboard and beautifully splashed with pink, silver, Red and sometimes even brown, they turn dark red in bright light. The flowers are awesome, the pale pink petals are covered with long white hairs and the stamen in the center of the dark pink corona has very long white hairs growing out. These flowers are not especially large but unique and simply gorgeous. Photo by Ann Wayman

Bottom Right

Hoya microphylla *Schlechter:* A tiny, dainty little species with very small leaves but flowers at least twice as large. I have featured this species several times in the past few years because it is so unique. I don't own this plant but hope to some day. The tiny leaves are adorable, a beautiful emerald green with nice veining and the flowers are gorgeous. I hear that it is rather hard to maintain in good condition but I want to at least try. Photo by Astrid Bostrom

PHOTO GALLERY

ONE OF A KIND

Nothing like this has ever been attempted before! Dale Kloppenburg's wonderful text in "The World Of Hoyas" has been kept intact, while all the old black and white photocopies of herbarium sheets have been replaced by full page, full color photos of beautifully staged foliage shots with large photo insets of flower umbels that represent the particular species.

Some of the very best photographers in our organization have participated in the publishing of this book with many beautiful photographs, all labeled and correctly identified to the best of our knowledge.

If you have ever wondered what an entire plant, or even the leaves and growth pattern looks like when you see an especially beautiful umbel of hoya flowers, now is your chance. This beautiful book has been professionally bound in perfect binding with a semi-soft vinyl cover. contains 260 pages with several blank pages at the back for notes. Available now. Just $48.00 for the book plus $3.25 book rate postage in the U.S. Postage for priority mail anywhere else in the world is at present $13.50 U.S.

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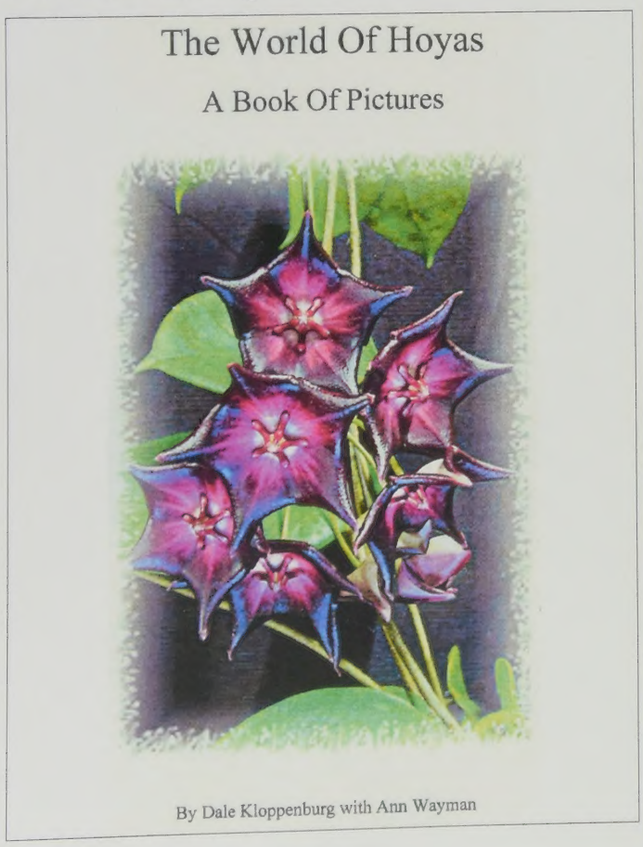

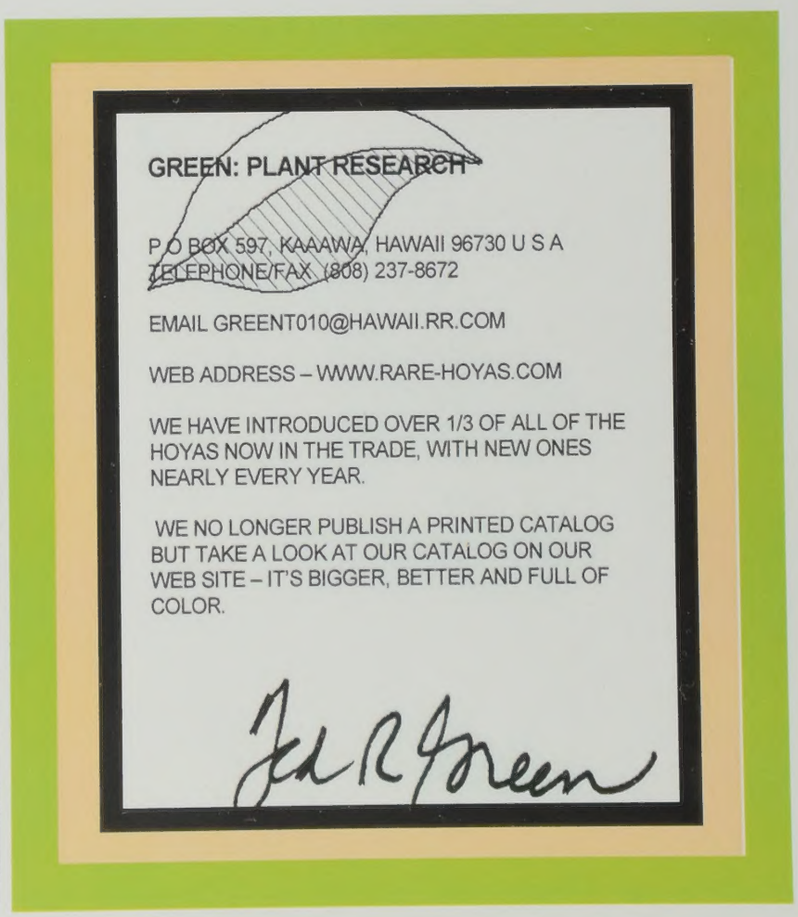
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WEB ADDRESS – WWW.RARE-HOYAS.COM
WE HAVE INTRODUCED OVER 1/3 OF ALL OF THE HOYAS NOW IN THE TRADE, WITH NEW ONES NEARLY EVERY YEAR.
WE NO LONGER PUBLISH A PRINTED CATALOG BUT TAKE A LOOK AT OUR CATALOG ON OUR WEB SITE – IT'S BIGGER, BETTER AND FULL OF COLOR.
Ted R Green

Unidentified Hoya Species from Teneba Pass

Photo by Ted Green